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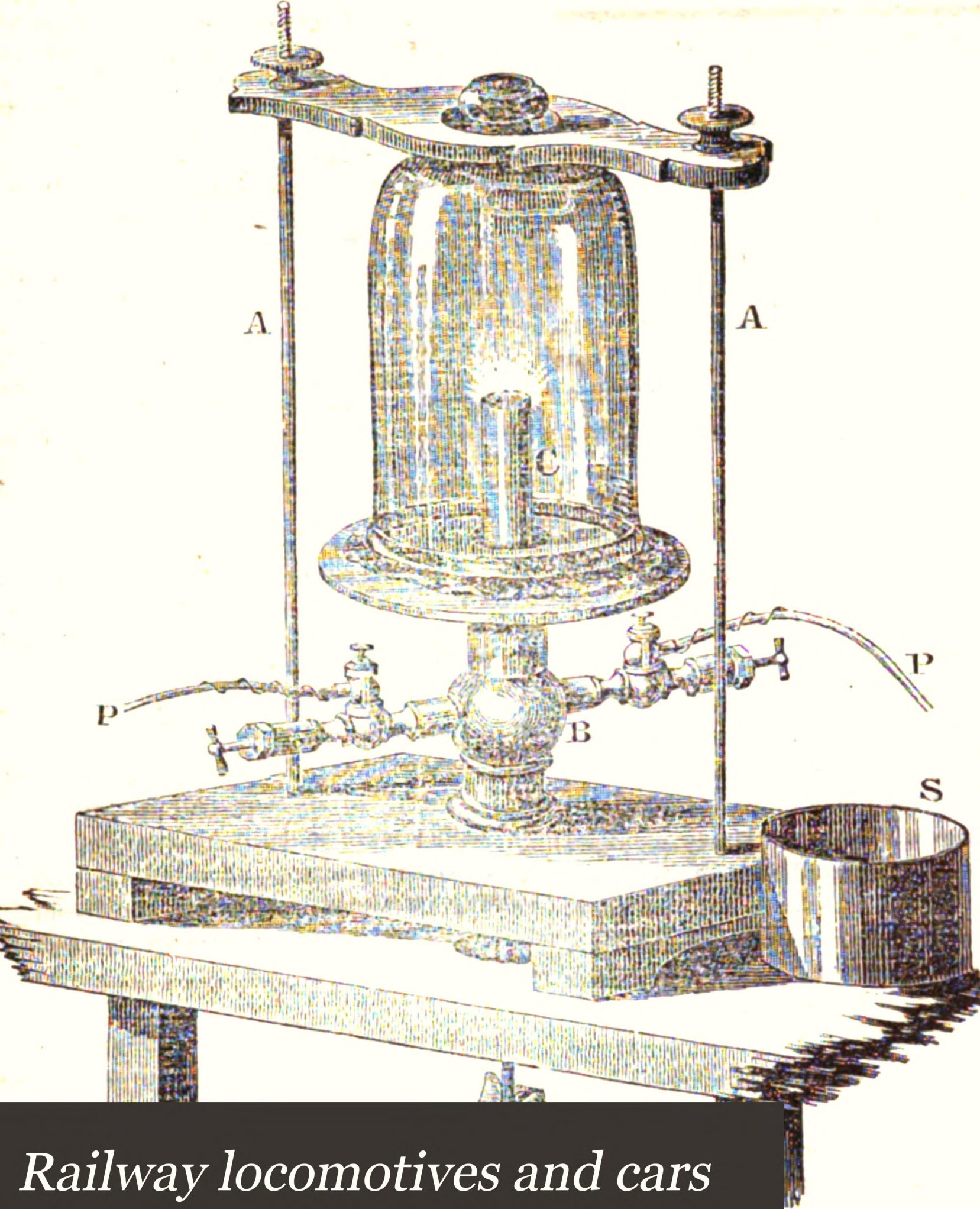
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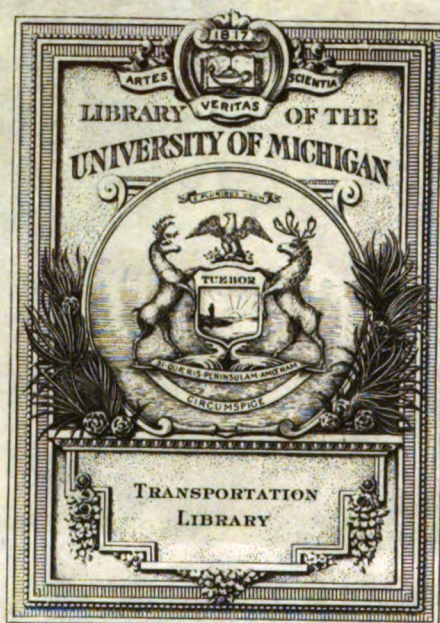
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Railway locomotives and cars



Collated - 10/1/31

AMERICAN RAILROAD JOURNAL,

AND

ADVOCATE OF INTERNAL IMPROVEMENTS.

JANUARY TO JULY, 1834.

VOL. III.—PART I.



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"Map of the Railroads and Canals
 Finished, Unfinished and in Contemplation in the United States.
 Drawn and Engraved for D. K. Minor,
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 William Norris." The size is 36" by 23½".

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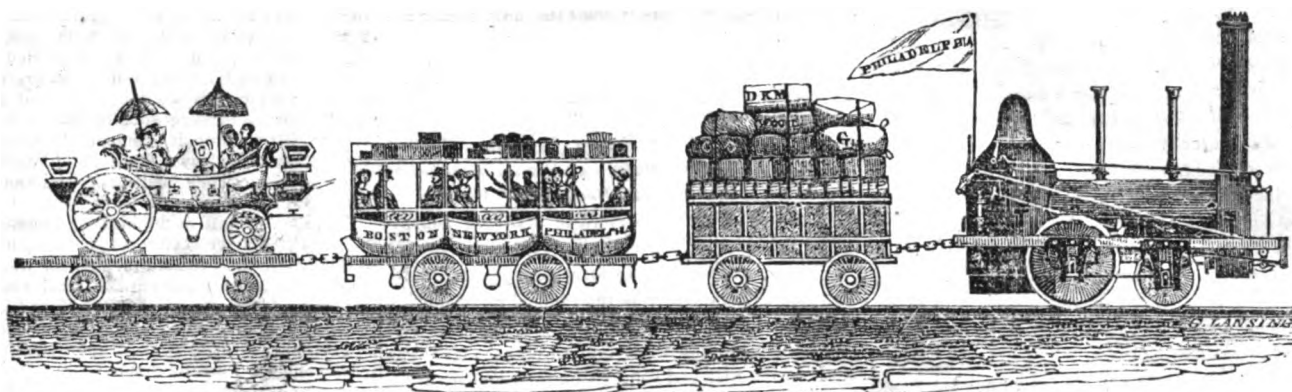
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D. K. MINOR, Editor.]

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, JANUARY 11, 1834.

TO THE PATRONS OF THE JOURNAL.—The second volume of this Journal has been completed, and with this number, (somewhat delayed, 'tis true,) another year is commenced.

In entering upon the duties of another year, it may not be amiss to ask those of its patrons and readers, who may have watched its brief career, have I fulfilled my promises? Has the Journal answered your expectations? Should you answer in the affirmative, as I, at least, may be permitted to hope, it will serve only to stimulate to renewed exertion to make the Journal more what I have desired, than I have yet been able to do. Should any of you, however, have cause to give a different answer, I can only say, that, under the circumstances, all that could be, has been done, to render it worthy of your continued patronage; and it now affords me much pleasure to assure you that I shall be able hereafter to render it far more valuable than heretofore. I shall not, however, now give any *new* assurances of my intentions, but merely repeat that, having decided to publish it *another* year, it will continue to pursue the path originally marked out for it. It will be mainly devoted to the subject of *Internal Improvement*, in its various modes. It will also have a mechanical, an agricultural, a miscellaneous, and a literary department—avoiding every thing like *partisan* politics, yet at the same time devoting a share of its pages to the recording of many of the important political measures of the day, for the convenience of those who desire to preserve them for future reference.

It has before been mentioned, yet it may be again, without impropriety, repeated, that thus far the Journal has not paid its expenses. I have, however, resolved to try it *another* year, and those who desire to have it, will run no risk by paying in advance for the volume, as I assure them that when once commenced, as it now is, it will be continued through the year, to those who *pay in advance*. Heretofore I have endeavored to *persuade* all to pay in advance, who wished the Journal sent to them; but have, in very many cases, been unsuccessful, either from the apprehension that it would not be continued, or from some other cause unknown to me; by which omissions I have not been able to make its income pay its expenses for *materials and labor*; and of course I have not only devoted my time to its supervision without compensation, but have also been obliged to advance, during the two years, over a *thousand* dollars to meet its ordinary expenses, that it might not be discontinued. Its discontinuance will not, therefore, I presume, be considered as a mark of disrespect by those who are *now* indebted for *past* volumes. It is always an unpleasant matter to part with old friends, especially if they happen to be *indebted* to us, and there is any prospect of obtaining the amount. It is, however, better that such friends should part while the debt is small, than that the acquaintance should be kept up entirely at the expense of *one* party—especially if it falls upon the one least able to sustain it. Those subscribers, therefore, who have not *yet* paid for the *previous* volumes, but wish to have it continued, will please to remember that prompt payment only for the *past* as well as for the *ensuing* volume will ensure its continuance. I am compelled to adopt this measure in order to reduce the expenses of the work, by printing only a number sufficient to supply those who *pay* for it, and to keep the sets, *now on hand*, complete. I regret exceedingly the necessity of such a course, but am resolved to work hereafter without compensation, for those only who are willing to aid in defraying the expense of materials and labor (except my own) necessary to its publication.

Bills will be forwarded in the next number

of the Journal to all who are now indebted for past volumes; and hereafter, each subscriber's name and residence, with the amount paid and date to which it pays, will be inserted in the Journal, that he may have evidence of payment in his possession, should his receipt be mislaid.

With a repetition, therefore, of the assurance that the Journal *will be continued at least another* year, and the expression of a hope that it will hereafter be a profitable work to all parties interested in it, as well as to the country at large, I beg to acknowledge the obligations under which the numerous favors of its friends have laid me, and to solicit a continuance, not only of their patronage as subscribers, but also as correspondents and friends.

* * In order to obviate the difficulty of remitting by mail, for want of *small bills*, I will observe that U. S. Bank notes of \$5, or over, may be remitted, when inclosed in presence of or by the Post-Master, at my risk, subject to postage, and credit for the amount will be given to the subscriber.

(D. K. MINOR.

New-York, January, 1834.

One word on account of the delay of this number. Absence and indisposition have been the principal cause. It will hereafter, as heretofore, be published on Saturday.

The Journal will, as heretofore, be published weekly, at *three dollars, in advance*. It will also be sent to those who desire it in *semi-monthly* form, with a cover, stitched, at \$4 per annum. Vols. I. and II. may now be had, *stitched in a cover, so as to be sent by mail*, like a magazine, or in boards at \$3, with price of binding, (25—50—or 75 cents,) per volume, as may be preferred.

In this number will be found "AN APPEAL TO THE PEOPLE OF THE STATE OF NEW-YORK," in favor of a Canal to connect the Erie Canal with the Allegany river. An effort is to be made, as we understand, to obtain an act of the Legislature, authorizing the construction of this important link in our works of internal improvement. It is a measure of great importance, and one which will, we trust, find no lack of friends in the right quarter. The documents accompanying the Appeal will be given in subsequent numbers.

Undulating Railroads. By A. CANFIELD. To the Editor of the American Railroad Journal, and Advocate of Internal Improvements.

SIR.—Having heard several of our most distinguished civil engineers express a disbelief in the theory of the undulating railroad as laid down by the ingenious discoverer of its advantages, (though they admit that they had not carefully examined the matter,) I am induced to offer some remarks on the subject.

What I propose to shew is, that a car must and will run over an undulating road, with a moving power less than would be required to move it on a level road. Though, to my mind, this is abundantly proved by Mr. Badnall, I shall take a different course to arrive at the same conclusion.

Let us first suppose a car placed on a level road, and a locomotive power, applied which is just sufficient to overcome all friction. Now, the smallest additional force will put the car in motion; and the velocity will be exactly proportional to the said additional force. We will suppose it to be so small as to produce the least conceivable velocity. Now, we will suppose the same car to be placed at one of the apexes of an undulating road. We will suppose the undulations to be segments of circles. Now, if a power is applied barely sufficient to overcome all the friction, it is certain that the car will run down and ascend on the opposite portion of the circle to the same height as that from which it started; and the principle of this movement is in no respect different from that of a pendulum vibrating in the same circle. If we then suppose the undulation or segment of the circle to be the same as that described by a "second pendulum," it will follow as an inevitable conclusion, that the car must pass from one apex to the other in *one second of time*. Here then is a certain distance on the undulating road passed over in a certain limited time, whereas, on the horizontal road, with the same moving power, the time occupied may be as great as can be imagined. You will observe, (and it is important,) that this result is obtained, notwithstanding that the friction is supposed to be constantly the same on both roads, and, of course, the amount of friction greater on the undulating, (as it is longer,) than on the level road.

But the most important fact is the one stated by the inventor, viz. that the pressure from a car is less on an inclined than on a horizontal road. This is certainly true, since a part of the gravitating force or weight of the car must be exerted, or expended, in accelerating the motion in descending; and the same portion of the gravitating force must be sustained, or overcome, by the moving power in ascending and the amount of pressure from which the rails are thus relieved is the same, whether the moving power be an impulse or a constantly acting power. This leads to a very surprising conclusion, viz. that since the pressure upon the rails diminishes in proportion to their steepness, it follows that the steeper the undulations the less moving power will be required; and this must be the fact, until the pressure upon the road is so much reduced that the locomotive power will cause the wheels to slip on the rails. I here, of course, suppose that there shall be no loss of momentum in consequence of the change of direction of the moving body.

Another proposition that bears on the case is, that the pressure of the car on the rails is diminished in the same proportion as the velocity is increased, and from this cause the friction is lessened in the same proportion. To prove this in a few words, let us suppose such a velocity to be given to a car as will cause it to move parallel to the surface of the earth, without touching the rails; now, but a moment's thought is necessary to show, that if this velocity be diminished, the pressure on the rails will begin, and will increase in exact proportion to the diminution of velocity, and the friction arising from this pressure will increase in the same proportion.

If, then, it is proved that the friction or resistance to motion is less, it cannot be denied that the same moving power will produce a greater velocity on an undulating than on a level road; at the same time, I hold it to be proven by my first proposition, that if the friction were the same on both roads, that the undulating road still has a decided advantage.

I would not at this time go so far as to make an undulating road over a level route, nor do I suppose that very long or very steep planes can be used; yet I see

no reason to doubt that this will be found to be one of the most important improvements that have been made in railroads.

I am, Sir, respectfully, your obedient servant,
A. CANFIELD.

Paterson, (N. J.) Jan. 2, 1834.

On the Improved Art of Boring for Water, as practised in the United States: and as the Foundation of a Water Company in New-York. By JOHN L. SULLIVAN. [For the American Railroad Journal and Advocate of Internal Improvements.]

The practice of boring for water appears to have been first undertaken from the rational probability of its success; but it was found necessary very much to improve the instruments of the art, on account of the nature of the rock and soil. And, for economy of labor, to devise a mode of applying the power of the steam engine to a machine which raises the chisel and allows its blow by sudden release and fall.

The alluvial soil, in which the operation is often to be carried on more deep than wells could be made, required, to reach the rock, the invention of an iron tube, having the quality of great stiffness, without any considerable projection at the joints, both in order to be forced down by powerful leverage, and to be clear within, for the operations to be carried on through it. Being undermined at the same time that pressure is exerted, it, by successive lengths, reaches the rock to be bored into, *through it*—should there not, as often occurs, have been found abundance of water at the surface thereof. Implements to overcome any obstacle in the way have also been contrived.

The tube being entered a little into the rock, and pressed down, makes therewith a tight joint; and thus a perforation to the depth of seven hundred feet has in several instances been made. There are, indeed, accidents to which the operation is liable, but there are, also, implements to meet such exigencies; experience has now rendered their management easy. The bore is generally first two and a half inches diameter; and if more water is required than it affords, or permits, it is enlarged to seven inches, by an instrument called the *reamer*.

When the work commences in a rock above ground, it is usual to excavate a small well, as the water often rises to the surface, or nearly so; or the bore is enlarged for the reception of the pump.

To bring up large quantities from a small bore, hydraulic principles have been superadded; which induce a more lively flow of water to the boring, and up into the pumps. The former, by abstracting the column and making a vacancy much below the height to which the water ordinarily rises; the other by placing the pumps externally on the sides of the bore, lower than the height to which the water rises. Thus availing of the natural difference between the head and the position of the pumps; that, thus, filling quicker, they may be larger, and deliver more.

To be successful, this art seems only to require suitable instruments and requisite skill; and there have now been so many instances, that it begins to become a rational inquiry, whether there may not be in the geology of our country, good cause always to expect success. And, instead of looking to distant ponds and streams for a supply of pure water, whether there may not be a provision by Nature, even for cities densely peopled, on the very spot they occupy?

The researches of geology seem to have established the most material facts in this inquiry, that the primitive rocks are always stratified. It appears, that, while the earth was yet without form, and void of life, the crystallization which constitutes the rocks was going on, and forming them in strata; of which, the cause can be but conjecture. It is possible that the process extricated the substance that makes the division between them, till its quantity was sufficient to deposit; and, being settled, the crystallization recommenced, thus; forming successive layers. But that, besides the strata of its own kind, general layers of different kinds should have successively formed, is not less true than curious. In one mass, they might not have been so easily raised as appears was done.

Thus the primitive rocks are, it is believed, invariably found in the order of succession, upwards, of granite, granular limestone with quartz, gneiss, mica slate, soapstone, sienite, succeeded by the transition rocks, metalliferous limestone, argillaceous, and siliceous slate, graywacke slate, and rubblestone; which are again succeeded by the secondary rocks, red sandstone, breccia, compact limestone, gypsum, and rocksalt; and over these the diluvial masses, or aggregations of rocks and earth; and among them the recent alluvial deposits.

Thus the granite of the highest mountains must, in its formation, have been level and low; but, when the formation of the dry land took place, was upheaved by some physical cause, which the Creator had prepared.

On the Alps, in the vicinity of Mont Blanc, stupendous masses of granite stand up thousands of feet, as if protruded through strata of more recent formation, which slope down from them.

It appears that much the same operation, on the grandest scale, have prepared the continents for the habitations of man. The same fiat which caused dry land to appear, created the valleys, and the plains, the streamlets, and the rivers, and set bounds to the sea.

On the continent of North America, there are, obviously, three distinct systems of mountains. The central line of the Appalachian, being the Alleghany mountains, is granite. And the eastern border of the base of the system may be described as appearing at the falls of all the rivers nearest tide, discharging into the Atlantic south of the Hudson. In Darby's geographical view of the United States, page 81, it is said, "this inflected line, from New-York to the Mississippi, is marked, at distant intervals, by falls, or rapids, in the bed of the streams."

The Alleghany mountains, being two thousand four hundred and seventy-three feet high, attract and condense the vapors and clouds, and is well known to be a more rainy region than the plains below, giving rise to numerous rivers.

It is reasonable to think, that when the granite strata rose from their original position, that cavities were formed by their disruption, and that whatever spaces occur, must be filled with water, and be the passage for it thence among the strata to the ocean; and if so, this water may be intercepted, in part, by perforating the strata. This might have been reasonably expected, and this expectation has been verified by trials.

The nearest boring to the Alleghanies is at the Public Armory, near Harper's Ferry, on the Potomac. The next at Baltimore; again near the Schuylkill; again at Princeton; then at New Brunswick; Somerville; Amboy; Newark; and Jersey City.

On the island of New-York there were stronger reasons for expecting to find water in the rock than elsewhere, because here commences the third system of mountain formation, dividing the waters of the Hudson and Lake Champlain from those of the bays of New-England. It commences here and extends northward, forming the mountains of Berkshire and Vermont. It is a range of primitive rock, the strata of which rise from the west and probably decline towards the east from the centre of New-England.

We have the authority of Professor Eaton, a teacher of Geology, to say that the strata of primitive rock, after spreading down from the west as far as the Hudson, begins to rise, and come to the surface in the Berkshire mountains. That they do thus actually slope upwards from the west is known by the excavations made in this island.

The city thus being at the point where the range commences its rise northward, at the same time the strata dip west, the waters therein cannot flow east, and must, of course, flow south. And that the spaces are full of pure water is not only ascertained by its outpouring at the head of the streams of the Highlands in a thousand places, but by its actual abstraction here, in a number of instances, and by the spontaneous outpourings of it also here on the spot, in the very centre of the city.

The natural indications of water here were strong before any experiment was made. The rock springs of the 1st Ward were known before the Revolution; and the central valley, before it was occupied by streets, was the seat of large and deep collections of spring water; and one of these was, in 1798, deemed by the Common Council sufficient for the whole city; and it was a question whether it should not be preserved for this purpose. But it was filled up. Nevertheless, the springs which fed it are not lost. They continue to flow, and are, in fact, recovered by the effect of the deep tube above described. The two or three millions of gallons a day, which then flowed here, are regained and protected by a mass of earth from fifty to a hundred feet deep.

The proof of this fact is in the success of three tubes. Two of them in West Grand street, the other in Lawrence, near Canal, at Cram's distillery; and

this one continually overflows on being reduced one or two joints.

There is also proof of the like issues of pure water on the east side, north of Chatham square, by the success of all the tubes that have been set down to the surface of the rock near the East river.

But on the West side the water is not obtained without penetrating the rock about one hundred feet, being on the top of the slope thereof, but this operation has in every instance been successful.

The general reason for expecting success in this operation being thus explained, the inquiry becomes perhaps the more interesting, how often the theory has been confirmed by practice? The instances have not been many, but are rather convincing. The least likely to succeed was that of the botanic garden, because begun on the bare apex of an elevated rock, about the highest ground in the island. It penetrates the rock 112 feet, and the water stands 94 feet deep, constantly renewed.

The next proof is one mile more south, at the great well of the Fire Engine Reservoir, 113 feet deep, of which 96 are in the rock, and considerable water is obtained.

West of this, near the Hudson, are those about one hundred feet deep, which supply the city with rock water, by means of drays; also, that at a distillery on Perry street, which gives 22 to 26,000 gallons a day.

More southerly, and on the highest part of Broadway, near Bleeker street, is that belonging to the Manhattan Company, lately the subject of consideration by the Board of Commissioners.

It will be recollected that this Company was instituted to bring in the Bronx water, which, at the time their charter was granted, was estimated to cost about 200,000 dollars; but, by more complete surveys, it was found very likely to absorb their whole capital of two millions, so as to defeat the purpose of employing the surplus of 1,800,000 as banking capital. The Company had employed double the amount of the original estimate in supplying the city with the best water they could command, when the progress of the art of boring for water came to the knowledge of the directors.

After making a well 42 feet deep, down to the surface of the rock, they penetrated it 400 feet, in the course of which operation good water was found between all the lower strata, and not less than eight times.

They were so well satisfied with the result, as to have it reamed to the diameter of 7 inches: and, by applying only the power of a six horse engine, raise about 130,000 gallons of water a day. And the Board of Commissioners pronounce it good and wholesome; it is in fact so, and clear as crystal.

They also calculate that 42 such borings only would supply the city with six millions of gallons a day. This one cost ten thousand dollars.

The Company may possibly have expected to raise, at once, as much as would supply the pipes already laid down, by their agent, stated at nearly 700,000 gallons a day; if so, it was rather a too great demand on one boring, though this one is, in the improved mode of management, probably capable of producing considerably more than it as yet has done.

But from some other cause, probably the preference which the stockholders give to banking with their capital, their water-works are offered for sale to the city; and might well have been an object of purchase to any party competent to their perfection, as no doubt all the houses along an extensive range of pipes would take the water, were it all as good as that thus derived from the rock.

It has thus been shown why the general formation of the country is favorable to the system of deriving water from the rock, and why New-York, specially favored, has only to penetrate a little deeper than usual to find pure water in great abundance, at a moderate expense, and, when thus obtained, incomparably finer than that of the Schuylkill at Philadelphia, and free from all unfavorable influences of climate or locality. For, however dense the population of the city may be, the rock water is defended by the depth and nature of its channels.

An apology to your readers would be offered for the length of this article, but that the subject is now becoming an interesting one to most of our sea-port cities. At New Orleans a company is incorporated having a large capital, and a banking privilege. The Mississippi is perhaps the only river in our country that, like the Nile, comes at midsummer cool from distant mountains of ice.

But no stream can be other than a drain of the district it waters. And it is well known that impurities combine chemically with water.

The recent survey and report for an aqueduct route from the Croton, though at an expense very dispropor-

tionate to the present city, may be preferred by the community. But it is possible that the certainty and readiness, the inexhaustible nature of the sources which come hither in the natural aqueducts of the rock, have not yet been duly appreciated by the public. They certainly have not been by the commissioners; and it remains yet for public opinion to decide the interesting question, how the city of New-York shall be supplied with pure and wholesome water.

To leave behind so productive a source of supply as the rock affords, is like leaving a fortress in the rear.

This resource will, at all events, be the object of a company of capitalists. It has been solicited of the Common Council that leave be given to deliver it by aqueduct pipes. It is stated in the Water Committee's recent report, that the city actually pays 273,750 dollars for the water distributed by drays; and the shipping 50,000 dollars. They compute the number of buildings for which water would be required at 35,000. They state that in the city of London there are eight water companies. It is not stated why the Corporation did not supply that city. The explanation would have been that, where capital is to be applied, those do it most economically who have the most interest in making it effectual. One of them is stated to have risen greatly in value.

Appeal to the People of the State of New-York and their Representatives in the Legislature, in favor of constructing the Genesee and Allegany Canal

At a meeting of citizens in the city of New-York, favorable to the construction of a canal from Rochester, on the Erie Canal, to Olean, on the Allegany river, held at the Shakespeare Hotel, Oct. 11, 1833, Christian Bergh was called to the chair, and Edwin Williams appointed secretary. After full discussion, and a variety of interesting statements, it was unanimously resolved,

1. That in the opinion of this meeting, from the statements made, and information obtained from authentic sources, the proposed canal will have an important bearing on the growth and prosperity of this state, particularly of this city, and ought to be constructed at the expense of the state; inasmuch as it will open a new and great thoroughfare through the rich valleys of the Genesee, Allegany, and Ohio, to the Mississippi.

2. That a committee of forty-five gentlemen, from all the wards of this city, be appointed to call the attention of the citizens generally to the subject of this canal, and to take such measures to present this subject to the Legislature at the next session, as shall be expedient.

APPEAL, &c

In this appeal it is proposed to show, 1st, That the connection of the Allegany with the waters of New-York harbor is practicable by canals through Pennsylvania and New-Jersey: 2. That it is practicable by a canal from the Allegany within New-York to the Genesee river, and thence by the Erie canal and Hudson river: 3. That the expense of constructing the Genesee and Allegany canal will be covered by the increase of tolls on the Erie canal, and of taxable property within the western counties of the state: 4. That the Genesee and Allegany canal, as a public highway, is preferable, at the present time, to every other mode of connecting the great western rivers, the Ohio and Mississippi, with the waters of New-York harbor, and will lead eventually to the construction of a railroad through the southern counties of the state to the Hudson river: 5. That the construction of such a canal and railroad will secure to the city and state of New-York a large portion of the immense trade with the population on the banks of the Allegany, Ohio, Missouri, and Mississippi, which is now transacted at Philadelphia, Baltimore, Washington and Alexandria, on the Potomac, and in New-Orleans.

I. That the connection of the Allegany with the waters of New-York harbor is practicable by canals through Pennsylvania and Jersey.

In the year 1789, some distinguished citizens of Pennsylvania formed The Society for promoting the Improvement of Roads and Inland Navigation within that State. Their surveys and estimates and perseverance finally resulted in the construction of canals and railroads between Philadelphia and Pittsburg. The Grand Pennsylvania canal, commencing at Columbia, on the Susquehanna, at the termination of the Philadelphia and Columbia Railroad, forty miles from that city, extends westward 173 1/2 miles along the Juniata, till it meets the Allegany Portage Railroad, at Holidaysburg. This road runs 36 miles to Johnstown. Thence the western division of the Grand Pennsylvania canal runs westward 105 miles to the Monongahela river at Pittsburg. The Allegany Port-

age railroad crosses the Allegany mountains at the height of 1398 feet above the basin of the canal on the eastern side, and 1171 feet above that on the western side. The Schuylkill Canal and Navigation Company, incorporated in 1815, have completed their canals and locks along this river from Philadelphia to Reading on the Schuylkill, 61 miles. The Union Canal connecting the Susquehanna with the Schuylkill, was constructed so recently as 1827. It commences four miles below Reading, on the Schuylkill river, and extends to Middleton, on the Susquehanna, 82 miles. The whole amount of costs and estimates for completing these works and other auxiliary constructions is \$20,267,280, of which more than 16,000,000 have been already expended.

Another route from the Susquehanna to the Allegany was surveyed some years since, by the celebrated English engineer, Weston, and by him reported practicable within the experienced cost of other constructions deemed practicable; that is, by the Juniata, the Conemaugh and the Kiskeminitas, with a portage over the mountains of 18 miles. The Pennsylvanians, as it appears by published reports of their society above mentioned, have also extended their views up the Allegany and French Creek, with a design to obtain the trade of Lake Erie. They have also contemplated a connection between the Susquehanna and the Allegany, by a canal within the State of New-York, with a view to draw the trade of the west up the latter and down the former, and thence, by the Union canal, to the Schuylkill and Philadelphia! The great Delaware and Raritan canal, now on the point of completion, connects the waters of the Delaware with the waters of New-York, which, with the railroad now established between New-York and Philadelphia, will give fresh inducements to the Pennsylvanians to enrich their State by facilitating transportation across it from New-York to Pittsburg.

It is true there are great obstacles to be overcome between the Susquehanna and the Allegany, within the State of Pennsylvania; but without disparaging the enterprise of that State, it may be safely said that a New-York Legislature, realizing, as it has done, the immense benefits of canal construction within this State, were they legislating for Pennsylvania and sitting at Harrisburg, would surmount those obstacles, and form that connection with the least possible delay; and it should be known that measures are now taking in Philadelphia to achieve that object by connections between the nearest points of the Susquehanna and the Allegany within Pennsylvania.

II. The connection of the Allegany with the waters of New-York harbor is practicable by a canal from the Allegany, within New-York, to the Genesee river, and thence by the Erie canal and Hudson river.

In respect to this branch of the subject, reference is made to the reports of the canal commissioners, printed with the Journals of the Assembly for the year 1826, in the appendix (F.) They are printed at large in the appendix to this Appeal.

III. The expense of constructing the Genesee and Allegany canal will be covered by the increase of tolls on the Erie canal, and of taxable property within the western counties of the State.

The Genesee and Allegany canal may be estimated at an equal cost with any equal section of the Erie canal, say of 90 miles. Then the Erie canal is to be considered as extended by this branch into the western rivers and the States of Ohio, Indiana, Illinois, Pennsylvania, Virginia, and Kentucky, and Missouri, so that the whole extension of the Erie canal to Hamilton, on the Allegany, by this southwestern branch from Rochester, which is 270 miles from Albany, will be the same in length as from Rochester by the western branch to Buffalo, which may be considered also as extending into the State of Pennsylvania and Ohio, on the lakes. Treating the Allegany and Genesee canal as an extension of the great trunk of the Erie canal, is doubtless the correct view of this proposed construction; for it is now apparent, from the vast increase of trade and transportation on the western waters, and the practicability of steam navigation from Pittsburgh to Hamilton, on the Allegany, a condition of inland navigation not known nor contemplated at the first design of the Erie canal, that the projectors of this great work should have directed it towards the western rivers as well as towards the lake Erie. It is indeed too clear to every man's apprehension, that if the State of New-York, with a full knowledge of the existing state of western trade and navigability of the Allegany, were limited to the alternative of terminating its Erie canal in the lakes or in the western rivers, the latter most certainly must be preferred, as opening an extent of river shores through a populous and fertile country, exceeding, by many thousand miles and many millions of people, the extent of lake shores and number of lake population, directly connected with this canal, independent of foreign favor. But happily the

State of New-York may now construct both branches of the Erie canal, and enjoy the benefit of the trade from the rivers as well as the lakes.

These views are founded on the general principle governing the profit of canal structures, stated by Mr. Gallatin, in his report as Secretary of the Treasury to the Senate of the United States, in April, 1808. "Canals," he says, "with a few exceptions, cannot, in America, be undertaken with a view solely to the intercourse between the two extremes of the canal and along the intermediate ground which they occupy. It is necessary, in order to be productive, that the canal should open a communication with a natural extensive navigation which will flow through that new channel. It follows, therefore," says he, "when a canal has been constructed, and it might be connected by another canal to another navigation, the first constructed canal will remain comparatively unproductive until the other improvements be effected, until the other canal also be completed." Thus, if the Erie canal had terminated in its course westward at the Genesee, it would have remained comparatively unproductive till its extension southward to the western rivers, or westward to the western lakes. Had the southwestern branch of the Erie canal to the Allegheny been first constructed, the same reason for extending the westward branch to the lake would have pleaded with no less force, but not greater, than does this appeal to the people and the Legislature of New-York in favor of the south-westward branch from the Genesee to Allegheny.

The report of Mr. Gallatin, above referred to, was made in obedience to the order of the Senate of the 2d March, 1807, which embraced the whole subject of canals connecting the Atlantic with the great western rivers. And it appears from the report that no mode of crossing the Allegheny mountains from the Atlantic to Pittsburgh, was deemed practicable by canals north of the Potomac. The connection of the Susquehanna with the Allegheny, by the modes above mentioned, was adverted to by Mr. Gallatin, but deemed inexpedient. He insists much on the great importance to the Union and to the Northern and Middle States, of effecting some convenient mode of turning the Allegheny mountains on the north, and connecting the great western rivers with their Atlantic harbors. But at that day the great project of the Erie canal had not been sufficiently developed to show that by these means the great barriers between Atlantic and western commerce might be turned on the north. In this view of the object of this appeal, it rises into a great national work which is to be consummated on the soil of New-York, by the construction of this canal, well worthy to be considered as the south-western branch of the Erie canal, and as much destined to add no less to the productiveness of the grand trunk of the Erie canal, than its present extension from the Genesee to Lake Erie has done, and is doing every year.

But the building timber upon the banks of the Allegheny, within this State, and along its banks in Pennsylvania, comprising five hundred miles of shores, exceeds in quantity the supply of New-York ship-building for the next ten years, and perishes annually or is consumed for fuel, through mere want of conveyance to the Atlantic. Builders, both in naval and civil architecture in the city of New-York, are paying annually large sums of money for supplies of timber and lumber from other States, at great prices, and for inferior qualities, while our own timber, of superior quality, perishes where it grows.

But the inhabitants of the western counties generally are interested in this construction. Their property will be largely increased in value by the increase of population and business incident to the establishment of another extremity to the Erie canal, which connects it with a "natural extensive navigation that will flow through that new channel."

On inspection of the census of 1820 and 1830 of the United States, and of our state census in 1825, an astonishing increase of population, wealth and advancement, will be perceived at the extremities of our great inland navigation, and at places of entrepot along its route. The increase in the 8th senatorial district at the western extremity, from 1825 to 1830, exceeds even that of the 1st senatorial district, including New-York and Suffolk, Queens, Kings, and Richmond counties. Referring to Williams' New-York Annual Register, a work of unquestioned accuracy, it will be seen that the increase in these two districts, from 1825 to 1830, was far greater than in any others. The increase of the 1st district being 48,723, the double of any other district except the 8th, and the increase of the 8th being 76,211, approximating to the double of that of the first.

It is remarkable that among the counties which comprise the 8th district, the increase during those 5 years

in Allegany, Cattaraugus, and Chataugue, is the greatest, and the number of paupers is less than in most other counties of the State—and that the aggregate increase of population in this State, 302,674, since the healthful and invigorating action of the Erie canal, exceeds the whole number of population in each of nine States in the Union, and nearly equals the population in each of five more. These facts demonstrate, beyond all question, that the establishment of another extremity to the Erie canal must advance the wealth of the counties in its vicinity on every side. The southern counties along the Pennsylvania line must share in this benefit, in common with the other southwestern counties, and all must enjoy a large increase in every kind of valuable and taxable property.

The cost of this new branch of the Erie canal, which can scarcely be sufficiently described by a name so limited as the Genesee and Allegheny canal, will be covered by the tolls. This is easily demonstrated. The cost of constructing the Erie canal from Genesee to Buffalo is covered by the tolls which this branch adds to the earnings of the rest of the canal; and not by the tolls collected for transportation on that part of the canal. In like manner the cost of this new branch will be covered by the tolls collected along the whole route of the whole canal, on merchandise which this branch will carry to and from the western rivers. If it be admitted that the cost of this branch will not exceed the cost of the Erie canal from the Genesee to Buffalo, and that the quantity of merchandise brought from the western rivers and conveyed to them will be no less than the quantity brought and conveyed by the branch from Genesee to Buffalo, the conclusion is irresistible, that the expense of the proposed canal will be as entirely covered as is the expense of the canal from Genesee to Buffalo. It has never been considered necessary that each section of the canal should produce tolls to the amount of 7 per cent. on its cost. It is enough if the whole receipts cover the interest on the whole cost. But in constructing another branch to a natural and extensive navigation, it is sufficient warrant for incurring the expense, if there be a reasonable presumption that it will bring and carry such an additional quantity of merchandise as will yield tolls throughout the whole extent of the canal to the amount of 7 per cent. on its own cost. Of this result no one can doubt from the extension of the Erie canal by this new branch towards that vast and increasing inland navigation. The rivers will yield and require as much transportation as the lakes, and the business on each will naturally augment both.

The amount of taxable property in the southwestern counties in buildings occupied as dwellings and stores, and in the increased value of their timber and farms and manufactories, will not and cannot be overlooked as an argument in favor of this construction.

IV. The Genesee and Allegheny canal, as a public highway, is preferable at the present time to every other mode of connecting the great western rivers with the waters of New-York harbor; and its construction will lead eventually to the establishment of a railroad through the southern counties of the State, to the Hudson river.

It is preferable, because that connection will be effected first by the state of New-York, by constructions wholly within its own limits. The great advantage of making the first connection by water between the Atlantic and the western rivers north of the Potomac, is manifest from the report of Mr. Gallatin, who observes that after the course of trade is once established upon any convenient route, it is scarcely possible to divert it into another channel. This fact he uses as an argument in favor of adopting at first the most convenient route. This mode of connection is preferable now, because it is the most convenient route for transporting supplies from the largest market of foreign goods, where of course the producer finds the best market for his productions of every kind. It is also preferable now, because it is wanted as a less expensive mode of transporting merchandise from New-York to the banks of the great western rivers of the Allegheny and Ohio, the Missouri and Mississippi, during the summer months, when the commerce of New Orleans is for the most part suspended. It is preferable to a railroad, because it may be sooner made and with far less expense. Yet it will lead to the construction of the railroad contemplated between the Allegheny and the Hudson, because, in the course of a few years, the transportation between the western waters and the Hudson will probably require both of these means of conveyance. The transportation through Utica, at the present time, equals in quantity, every twenty-four hours, the whole lading of two large ships in the Liverpool line of packets.

But it is preferable because the rate of tolls between the Hudson and the Allegheny can be regulated at

convenience by our own Legislature. It is enough if the aggregate receipts of all the canals cover the expense of all by yielding 5 per cent. on the whole.

V. The construction of such a canal and railroad will secure to the city and State of New-York a large portion of the immense trade with the population on the banks of the Allegheny, Ohio, Missouri, and upper Mississippi, which is now transacted at Philadelphia, Baltimore, Washington and Alexandria on the Potomac, and in New Orleans.

By far the largest portion of population on the western waters, lies on the banks of the Ohio and Allegheny, nearer to the Hudson than to New Orleans, and it will always be in the power of this State, by making the transportation cheaper between the Hudson and the Allegheny, to secure the trade from Cincinnati and the banks of the Ohio for the city and State of New-York, if ever a lower rate of transportation of foreign and domestic manufactures should be essential to this result. But as a large portion of these manufactures, which now ascend from New Orleans, have been, and must need be, imported into New York, and be sent coastwise to New Orleans, before they can reach the shores of the Missouri, the upper Mississippi, and the Ohio, the freight and insurance from New York to New Orleans, must be superadded to the river transportation upwards, and in this view it is clear that New York must secure to itself, by the construction of this canal and of the railroad from the Allegheny, a large portion of the trade which is now transacted in New Orleans, and by parity of reasoning, a large portion of that done through the Chesapeake and Ohio canal to the Potomac, and the grand Pennsylvania canal to the Schuylkill: for New York sends her importations to every city in the Union.

It is respectfully urged upon the people, and the members of the Legislature, that the present is the fitting time for action. The whole country is prosperous beyond all former conditions of welfare; engineers of experience are at hand; and practised laborers are numerous. The necessities of life are cheap, and wages low. A spirited effort might accomplish this great national work within a year from its commencement.

CHRISTIAN BERGH,
Chairman of the Committee.

[To be continued.]

The following are specimens of letters which are daily coming to hand, since the continuation of the Railroad Journal was announced. Most of those who have been familiar with it from its commencement, appear to view it alike as not only being worth its cost, but also, of some benefit to the cause to which it is mainly devoted, notwithstanding the very little attention which my other avocations have hitherto permitted me to devote to it. It has been thus far, or for two years past, my evening's amusement, or task. It will hereafter receive a share also of my daily attention, and it will therefore I trust be found to contain a greater variety of useful and interesting reading than I have yet been able to furnish. I have no hesitation to guarantee it, if all those who patronize the Journal by subscribing for it, will do so in a manner as substantial as the gentlemen who wrote the following letters. Such patronage can be relied upon; it enables an editor to borrow the ideas of others to enrich, rather than their money to pay the expenses of, his Journal; and it may well be said that he who is often obliged to resort to the latter, can hardly be expected, either to make judicious selections, or to communicate his own ideas relative to measures and modes of improvement in a proper manner. On this subject, the editor of this Journal speaks feelingly.

DEAR SIR: Although I am unable to procure any subscribers to your valuable Journal, I am not the less anxious for its prosperity and circulation through this country. I regret that scientific men, men whose circumstances in general enable them to reap great advantages from such a publication, should

have permitted you, by their neglect, even for a moment, to anticipate its discontinuance. Gratiified, however, that your prospects are sufficient to induce its continuance another year, I herewith enclose to you a five dollar bill, and my best wishes for better success hereafter. Truly yours, S—.

DEAR SIR,—When I saw some weeks ago your notice that the Railroad Journal was in danger of death from *atrophy*, I was truly astonished that the friends of internal improvements in this extensive country could be so few or so blind to their own interest as to suffer a paper so valuable to languish for a moment; and I am happy to perceive by the notice in the Journal of the 23d November, that they only wanted a little prompting, and that subscriptions have so far increased as to warrant the hope of its continuance.

I feel somewhat as if an apology was due from this quarter of the country, for the very meagre subscription list it affords the Journal. We are deluged with political papers, (more than are or ever will be paid for,) which, most of them, serve very little purpose but to exasperate the feelings of the community. Every one thinks he must take his party's paper, and very few think they can afford to take any other. I have endeavored, as far as I have had opportunity, to procure names for you, but do not know that with any success. Some have told me that they would send for the Journal, but whether they have or not I do not know. I did not sent their names because they did not advance the money.* We are yet years behind other parts of the country on the subject of public improvements; I think, however, that as soon as some "demonstrations" are made with regard to railroads which are now in embryo in this region, there will be a change of feeling and action, and I hope many copies of the Journal will be called for.

You intimate (Nov 23d) a possibility of changing the form of publication from weekly to semi-monthly, or monthly, and, among other reasons, you mention the greater certainty in transmission by mail. Newspapers from all parts, particularly political papers, have been occasionally missed, or materially damaged; but my journal has in no one instance failed. It has sometimes been delayed a week or so, and that is all. I impute this to your careful and strong wrapping, and very legible direction. I think nothing else would have saved it. A semi-monthly or monthly could not have been more certain, and, as far as I have known, not so regular. An objection may lie against the change, as the character of the paper may be considered as changed from newspaper to magazine or pamphlet, which, you know, involves an increase of postage. As another objection, I mention a remark made to me just now by a lad who had just taken up the Journal, as usual after his day's work, and was reading the introductory article: "we cannot wait so long." You see, therefore, there are some who would prefer it as often as possible. Perhaps, however, other considerations may preponderate on the other side, and we must submit to the majority vote. If the majority should be against me, you may depend on it I shall act on this subject like some of our trimming politicians and go over to the strongest party, and precisely for the same reason—love of the "spoils"; for I shall not be disposed to give up the Journal for a mere change of form, so long as I think I get more than the worth of the money by it.

This, by the way, brings to mind your threat (if I may call it so) of raising the price to four dollars. To this subscribers may, of course, be expected to object; but if we cannot support it by an increased number, why, then better pay an increased price than not at all. I would take the liberty, however, to suggest, that as most of the subscribers probably take the paper only, or chiefly, for the benefit they derive from the railroad department, or its collaterals, perhaps it would better reconcile them to an increase of price, (should you resolve on that measure,) if the proportion of matter in that department should at the same time be increased at the expense of some of the miscellaneous matter. But I would not undertake to judge, and would apologize for the liberty I have taken, were it not that I think it quite as safe to trust the whole to your candor.

Respectfully, your obedient servant, M. G.
Maine, Dec. 3, 1833.

* Mr. G. has since ordered the previous and ensuing volumes for a gentleman.

We understand that two locomotives for the use of our railroad, arrived in the ship *Saluda*, this morning, from New-York, and that another

is soon expected in the *Lady Rowena*, from Liverpool.—[Charleston Patriot.]

The Milton (N. C.) Spectator says: "The enterprize of connecting Raleigh with Petersburg, and Richmond with Fredericksburg, or in other words extending the Petersburg railroad to Raleigh, and constructing one from Richmond to Fredericksburg, will no doubt be crowned with success. The legislature of both states are willing to grant a charter, and when completed will form one of the grandest thoroughfares in the United States. Success attend it."

The same paper remarks that, "The tobacco crop, from all that can be gathered from most sources, is certainly short, compared even with the previous year. Some reckon it is short by one-third, and many by one-half; perhaps the former may be the most accurate. The prices consequently will be well supported, if short crops have such a tendency."—[Petersburg Intelligencer.]

[From the Louisville Public Advertiser.]

CUMBERLAND BAR.—The obstruction in the navigation of the Ohio, occasioned by this formidable bar, has been completely obviated. A dam, five eighths of a mile in length, fifty feet broad at its base, eight feet wide at the top, and rising four feet above low water, has been erected between Dog Island, near the Illinois shore, and the head of Cumberland River. This dam is so secured by abutments that it cannot be undermined by the action of the current; and, by it, all the water that flows down the River, at a low stage, is thrown between Cumberland Island and the Kentucky shore. No doubt is entertained of the permanency of this very extensive dam, by which the bars at the head and foot of the Island have already been so far removed, as to give, at that place, as great a depth of water as there is over the ordinary bars of the river; and the action of the current is daily deepening the channel and sweeping away the remnants of the bars. The citizens of Smithland are delighted with the improvement, and it must prove highly acceptable and beneficial to those engaged in the navigation of the Ohio.

WHITE PINE.—This tree, which constitutes the uncoined bullion and much of the present wealth of this part of the country, is the loftiest tree in the United States. It attains sometimes the height of 150 feet, or even more, with a trunk five feet and upwards in diameter. Its foliage is evergreen, light, delicate, and making an elegant appearance. It is found most abundant between the forty-seventh and forty-third parallels of latitude, along the Alleghanies to their south-western termination, and in its greatest glory west of the Rocky Mountains, on the river Oregon. On the head waters of the Alleghany is cut all the pine destined to supply not only the towns along the Ohio, but also the New-Orleans market, 3000 miles distant. On the head waters of the Delaware are large forests of white pine, which are floated in spring down the waters of that river, and the west branch of the Susquehannah, for the supply of the cities and towns in that quarter. The shores of Lake Champlain, and the banks of the rivers flowing into it, abound in this kind of pine, which is partly floated down the St. Lawrence to Quebec, and partly through the northern canal to Albany, whence it is distributed down the Hudson. But Maine furnishes about three-fourths of all the white pine lumber exported from the United States, and the Penobscot river is the centre of this trade, and hereafter must furnish the main supply in the lumber market. Throughout the northern states, about three-fourths of all the houses are built chiefly of this material, and the ornamental work of nearly all the rest is composed of it. For masts and spars its use is almost universal throughout the middle and northern states; and owing to its lightness, its loss could not be supplied without considerable difficulty. The Riga masts are said to have more strength; but the English derive most of those in the merchant service, and yards and bowsprits for the navy, from New-Brunswick and Canada.

As the sources of supply are annually drying up, and the demand is constantly increasing, the pine timber lands of our state are becoming invaluable.—[Bangor Rep.]

PROSPERITY OF ILLINOIS.—The following letter, from the Vandalia Whig, affords an example for clergymen, and particularly missionaries, to make public information connected with the prosperity and happiness of the people.

We copy with pleasure the following interesting extract of a letter from the Rev. J. M. Peck to Gov. Reynolds. Mr. Peck has travelled over the State perhaps as much as any person in it. He has recently made the tour of the Northern Counties, and takes an interest in noting the progress of every valuable species of improvement; his comparison between the appearance of things there, in the present and former seasons, may doubtless be taken as founded on correct data. Mr. P. is a gentleman of high character, of intelligence, and close habits of observation. His letter may be safely trusted "beyond the Blue Ridge" by those who wish to hear from the "far West."

ROCK SPRING, Ill. Oct 12, 1833.

Gov. REYNOLDS:

Dear Sir,—It will be gratifying to you, as it is to me, to learn that our state is improving rapidly in population, industry, enterprise, wealth, character, and intelligence. The crops, generally, are more than ordinary. I judge that two acres of corn have been raised this season wherever one was before, and the amount of new ground broken, fences made, and buildings erected, is double to any former year.

Schools are increasing—and a better order. Sunday schools have gained about twenty-five per cent. The class of emigrants who come are generally of the first order—then of more wealth, intelligence, and enterprise.

Chicago is destined to outstrip every other town in the State. The average amount of buildings has been one a day. Seventy arrivals of schooners, and two steamboats, from April 18 to September 11. Population now about eight hundred. Thirty stores, and plenty of mechanics.

Ottawa does not thrive rapidly. Our canal commissioners ought to have fixed the town four miles up Fox River, at the Rapids. There is the great place for business, and will eventually become one of the greatest water power places in the great West.

The Railway from Chicago to the foot of the Rapids of Illinois, (not at Ottawa,) ought to be going forward, and I think should cross Fox River at the Rapids of Fox, and run from thence straight to Chicago.

Indeed, the project should now be entered upon of a Railway from Chicago to Alton. Make it first to the navigable waters of Illinois, say Little Vermillion.

If once made to that point, I have no doubt the business would more than pay the interest on the capital and ordinary expenses. Then commence at Alton and make one to Springfield. When this is completed, I would defy the world to prevent the two ends from being tied together. Twenty-five years will see this done.

Excuse my rude suggestions—doubtless the subjects have occupied your thoughts before.

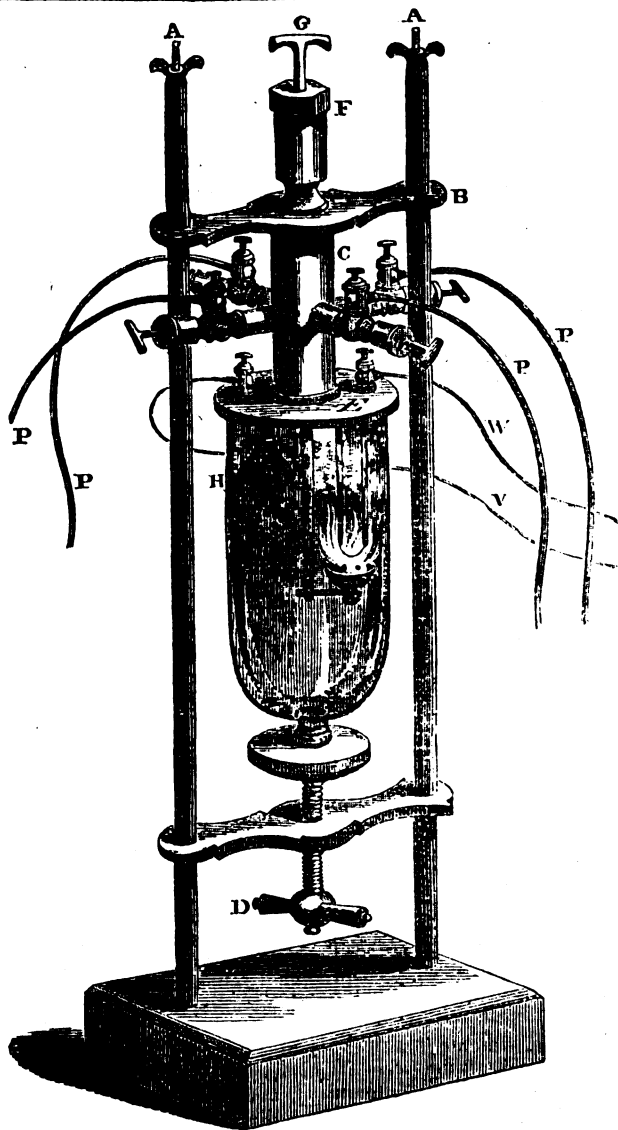
I will only add, a most interesting, because most useful, discovery has been made in the upper country, to make prairie fence for 20 cents per rod—and I think it will last forever. It is made of turf or sod, but in a peculiar way, so as to bring the grass wholly outside. If it succeeds, as I believe it will, the question about the immediate cultivation of our large prairies is settled—and millions of acres in Illinois can be put under immediate cultivation.

But I will trespass no longer on your time.

Very respectfully, yours,

J. M. PECK.

The North River is frozen over as far down as Spitendevil Creek, within 12 or 14 miles of the city.



Apparatus and Processes, by Robert Hare, M. D., Professor of Chemistry in the University of Pennsylvania. [Communicated by the Author.]

1. APPARATUS FOR EVOLVING SILICON FROM FLUO-SILICIC ACID GAS.—Into a stout mahogany block as a basis, two iron rods, A, A, are so planted as to extend perpendicularly, and of course parallel to each other, about two feet in height. Upon these rods two iron bars are supported horizontally, one, B, near their upper extremities, the other at the height of about six inches from the wooden basis. In the centre of the lower bar there is a screw, D, having a handle below the bar, and supporting above it a circular wooden block. Into a hole in the upper iron bar, equi-distant from the rods, is inserted a hollow brass cylinder, C, which at the lower end screws into an aperture in a circular plate of brass, E, which is thus supported horizontally a few inches below the bar. By these means room is allowed for the insertion into the cylinder of four valve cocks, each furnished with a gallows screw. The cylinder is surmounted by a stuffing box, through which a copper sliding rod, G, passes air tight. The brass plate is turned and ground to fit a bell-glass of about five inches in diameter, and eight inches in height, which is pressed up when necessary between the plate and the block by the screw D, supporting the block. Within the space comprised by the bell-glass, and on one side

of the centre of the plate, two stout brass wires are inserted, one of them insulated by a collet of leathers, so as to admit of the ignition, by a galvanic discharge, of a small arch of platina wire, which terminates them. The sliding rod, above-mentioned as occupying the stuffing box, terminates below the plate in an elbow, which supports a cap at right angles to the rod, at the same distance from the rod as the platina wire, and on the opposite side of it there is a brass cover, H, for the cap, supported from the plate. The arrangement is such that, by a suitable movement in the sliding rod, made by grasping it by the handle G, in which it terminates externally, the cup may be made either to receive into its cavity the platina wire, or to adjust itself to its cover, H.

The bell being removed, about sixty grains of potassium, in pieces not exceeding more than fifteen grains each, are to be introduced into the cup, which is then to be adjusted to the cover, and the bell secured. In the next place, by means of the flexible lead tubes, P, P, P, P, and the gallows screws attached to the valve cocks, establish a communication severally with an air pump, a self-regulating reservoir of hydrogen, a barometer gage, and a jar over the mercurial cistern containing fluo-silicic acid gas. First, by means of the air pump exhaust the bell, and in order to wash out all remains of atmospheric air, admit hydrogen from the reservoir. Again exhaust, and again admit

hydrogen. Lastly, exhaust the bell of hydrogen and admit the fluo-silicic acid gas. By means of the gage the exhaustion is indicated and measured, and by the same means it will be seen when the pressure of the gas within the bell approaches that of the atmosphere. When this takes place, the cocks being all closed, by means of a calorimotor, the platina wire is to be ignited, and the potassium brought into contact with it.

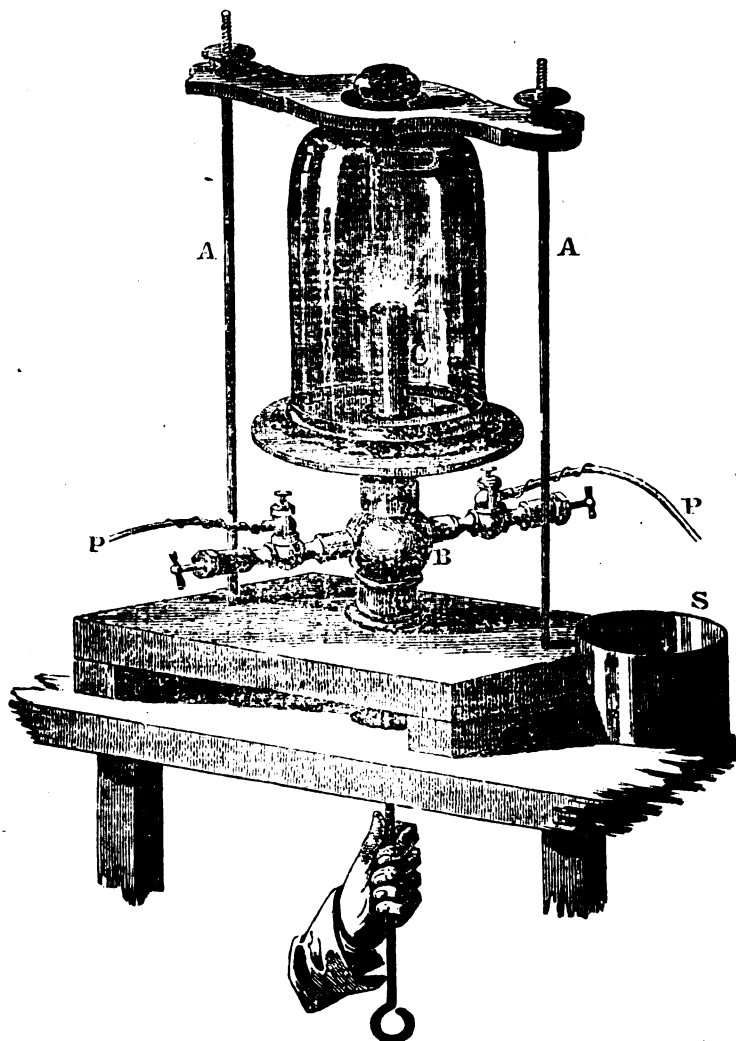
A peculiar deep red combustion ensues, evolving copiously chocolate colored fumes, which, condensing into flocks of the same hue, subside throughout the receiver, (excepting the color,) like snow in miniature. On removing the bell after the potassium is consumed, the cup which held it will be found to contain silicon, mixed with the fluoride of potassium, and with this indeed the whole of the powder deposited is contaminated. Silicuret of potassium is likewise formed in the cup, since on the affusion of water a fetid evolution of silicuretted hydrogen ensues. By repeated infusions, first in cold, and afterwards in boiling water, agreeably to the directions of Berzelius, the silicon is left in the state of a brownish ash-colored powder.

Thus obtained, silicon does not appear to be acted on either by sulphuric, nitric, fluoric, or muriatic acids; nor when exposed to nitrate of potash, liquified by heat. It seems to be soluble for the most part in a mixture of nitric and fluoric acid, which by analogy we called nitro-fluoric acid; but after exposure for 18 hours to this solvent, a small portion of a black matter remained undissolved. This is, in all probability, carbon derived from the potassium, which, according to Berzelius, when obtained by Brunner's process, is liable to be combined with carbon. The solution of nitro-fluoric acid, decanted from the residual black powder into a solution of pearlash, gave a copious, white, gelatinous precipitate like silex, which, when thrown into a large quantity of water, subsided undissolved. When on subjecting the silicon to red hot nitrate of potash, anhydrous carbonate of the same alkali was added, so as to co-operate with the nitre, an explosive effervescence took place. All the silicon disappeared, and a compound resembling the silicate of potash was produced. This anomalous re-action may be considered as characteristic of silicon.

The impression that the black matter insoluble in the nitro-fluoric acid was carbon, is confirmed by the fact, that after the silicon had been digested for some hours in strong nitric acid, and finally boiled in it to dryness, it dissolved in nitro-fluoric acid without any such residuum.

2. IMPROVED PROCESS FOR THE EVOLUTION OF BORON.—By means of an apparatus represented by the annexed engraving, I have succeeded in evolving boron by the reaction of potassium with vitrified boracic acid in vacuo, without encountering the evil of any explosive action, to which the process as heretofore conducted, in pleno, has been found liable.

A circular brass plate is prepared, like the plate of an air pump, so as to produce, with any suitable receivers properly ground, an air-tight juncture. It is supported on the upper end of a hollow brass cylinder, B, with the bore of which it has a corresponding aperture. The brass cylinder is about three inches in diameter, and six inches in height,



being inserted at its lower end into a block of wood as a basis. This cylinder receives below, a screw, which supports a copper tube, C, of about two inches in diameter, so as to have its axis concentric with that of the cylinder, and to extend about four inches above the plate. The copper tube thus supported is closed at the upper termination by a cup of copper, of a shape nearly hemispherical, and soldered at the upper edge to the edge of the tube; so that the whole of the cavity of the cup is within that of the tube. Hence the bottom of the cup is accessible to any body not larger than the bore of the tube, without any communication arising between the cavity of the tube, and that of any receiver placed upon the plate, over the cup and tube, as in the figure.

Into the side of the cylinder supporting the plate, a valve cock is screwed, by means of which, and a flexible leaden tube, a communication with an air pump is opened, or discontinued, at pleasure.

The cup being first covered with a portion of the vitrified boracic acid, as anhydrous as possible, and finely pulverized, the potassium is introduced, and afterwards covered with a further portion of the same acid, two parts of the potassium being used for one of the acid. A large glass receiver is now to be placed on the plate, secured by rods, A, A, concentric with the tube and cup; from the heat of which the glass is to be protected by a bright cylinder of sheet brass, S, placed around it so as to be concentric with the receiver and tube.

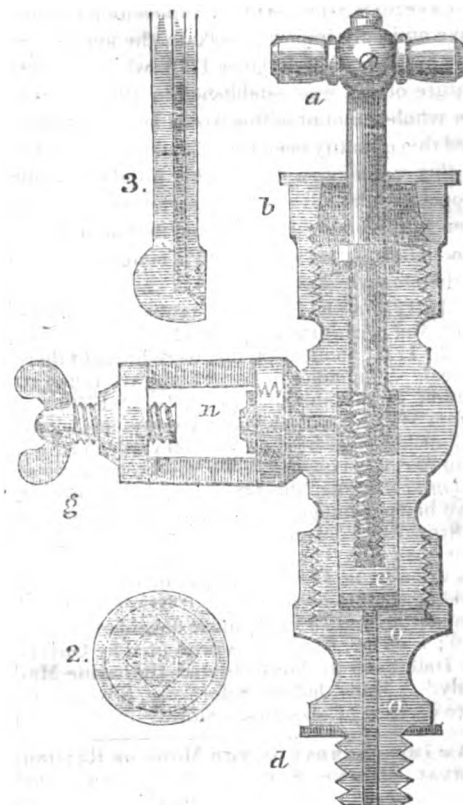
The apparatus being so prepared, and the receiver exhausted of air by means of the

air pump, an incandescent iron is introduced through the bore of the tube, so as to touch the bottom of the copper cup. In a short time a re-action commences, which aiding the influence of the hot iron, renders the cup and its contents red hot. A deep red flame appears throughout the mass, after which the re-action lessens and the heat declines.

When the cup has become cold, the air is admitted into the receiver and the contents are washed with water. If any of the acid has escaped decomposition, it may be removed by boiling the mass with a solution of potash or soda. After this treatment and due desiccation a powder will remain, having the characteristic color and properties of boron.

The additional valve cock, represented in the figure, gives the option of introducing dry hydrogen for the purpose of washing out atmospheric air, as described in the process for silicon.

3. DESCRIPTION OF THE VALVE COCK, A PERFECTLY AIR-TIGHT SUBSTITUTE FOR THE COMMON COCK, ALLUDED TO IN THE PRECEDING ARTICLES.—This figure is intended to illustrate the construction of a substitute for a common cock, which I have been accustomed to call a valve cock. It was devised by me about twenty years ago, among a number of other analogous contrivances, and seems upon the whole less liable to fail than any other which I have tried. The engraving represents a longitudinal section of the valve cock. At *a* is a piston with a collar enclosed in the stuffing box *b*, so as to be rendered air-tight by means of oiled leather. Hence the piston may be turned or made to



revolve on its axis, while incapable of other motion. Upon the end of the piston a thread for a screw is cut, which fits into a female screw in the brass prism *c*, so as to cause this prism to approach to, or retreat from a bearing, covered by leather, in the centre of which there is a perforation, *o o*, communicating with one of the orifices of the instrument. This orifice is surrounded by the male screw *d*, so that by means of this screw the valve-cock may be fastened into an appropriate aperture, properly fitted to receive it, subjecting an interposed leather to such pressure as to create with it an air-tight juncture. The prism *c* has two of its four edges cut off (see fig 2) so as to allow a free passage by it, reaching to the lateral perforation terminating in another orifice, over which there is a gallows screw, *g*. By means of this gallows screw, when requisite, a brass knob, such as that represented by fig. 3, soldered to a leaden pipe, may be fastened to the valve cock. The juncture is rendered air tight by the pressure of the screw in the gallows, upon a leather which is kept in its place by means of the nipple *n*.

The method last mentioned of producing an air-tight juncture, was contrived by me about seven years ago, and proves to be of very great utility. There is no other mode with which I am acquainted, of making a perfectly air-tight communication, between the cavities previously separated, at all comparable to this in facility.

GARDENS OF SHIPS.—To sow in the temperate zone and reap between the tropics, is a somewhat singular thing. Yet it is constantly done. For our great East India ships, in imitation of the Dutch, who first introduced the practice, have little salad gardens in flat wooden boxes on their poops, where the seed, acted upon by a heat increasing daily, shoots up in a surprizingly rapid manner. In these gardens the number of crops in the year are more numerous than in any spot on earth, for

the gardeners, if so minded, can command almost any temperature.

AMERICAN SILK.—On the supposition that we have annually imported silk to the amount of four millions dollars, since 1770, when the first filature of silk was established in Philadelphia, the whole amount of this would be 252,000,000. Had this quantity been raised and manufactured in this country, a far greater number of our people would have been employed than has been in the business attending its importation. The following we take from a communication to the Genesee Farmer :

"In 1770 a filature was established in Philadelphia, and premiums announced.

"In 1771, about 2300 lbs. were brought there to reel. The ladies in particular gave much attention to the subject; as early as 1770, Susanna Wright, of Lancaster county, at Columbia, made a piece of mantua of 60 yards in length from her own cocoons. To give eclat to these *Colonial designs*, the Queen of Great Britain gave her patronage by deigning to appear in a Court dress from this *American Silk*. Yes, in American Silk! but at the present day all our silk dresses, and even our ornaments for public buildings, must be imported. 'Grace Fisher, a minister among Friends, made considerable silk stuff; a piece of her's was presented by Governor Dickinson to the celebrated Catharine Macaulay.' Many ladies, before the Revolution, wore dresses of *American Silk*."

AN IMPROVEMENT IN THE MODE OF RAISING ANNUAL FLOWER SEEDS.—After sowing the patch of seeds, and covering it with fine moist soil, place a garden-pot inversely over it, until the seeds have struck root; then raise the pot up two or three inches, keeping it thus supported for a few days, and then remove it entirely. The pot not only keeps the soil moist, but by the sun heating the pot, the seeds come up much more quickly than otherwise they would do, in consequence of which the seeds need not be sown so early by a fortnight or upwards. The young plants are therefore less exposed to injury from cold or late spring frosts. Hollow tiles, instead of pots, answer equally well, except that where mice are, they have excess to the ends.—[Gardener's Mag.]

WOOL IN ENGLAND.—Mr. Arthur Young calculated the number of sheep in England alone at nearly 29 millions, and the value of the whole growth and labor of wool produced in Great Britain and Ireland at £17,695,529, furnishing employment to about a million and a half of people. However, if we estimate the number of sheep in the whole Island of Great Britain at 28 millions, producing at an average of five pounds weight of wool each, or 140 millions of pounds in all, equal to 583,333 packs, and worth at the rate of 8d. per lb., or £8 per pack, £4,686,664, this is acknowledged to be pretty near the truth. There is also imported into England from Germany, Spain, New South Wales, and other countries, from twenty to twenty-five millions of pounds weight of foreign wool. The value of this wool may be estimated at a higher price than that of English wool; we will, therefore, take it, on an average, to be worth 1s. per pound, or £1,250,000; the value of English and foreign wool manufactured in England will therefore be £5,936,664. If the value of the raw material is quadrupled by the labor employed in manufacturing it into cloth, the growth and labor together will amount to nearly 24 millions sterling, of which nearly one half is exported in a manufactured state, the remainder being consumed in the United Kingdom.

WINE FROM THE COMMON BRAMBLE.—Five measures of the ripe fruit, with one of honey, and six of water, boiled, strained, and left to ferment, then boiled again and put in casks to ferment, are said to produce an excellent wine.

In France, the color of wine is often rendered darker by a mixture of blackberries with grapes.—[Recueil Industriel.]

NEW-YORK AMERICAN.

DECEMBER 28—JANUARY 11, 1834.

HOME INTELLIGENCE.

The Legislature of New York convened on Tuesday. Lieut. Gov. Tracey took the chair in the Senate, and thirty Senators answered to their names.

In the Assembly, 124 members appeared, and balloted for Speaker. Wm. Baker, of Otsego, was chosen, receiving 113 votes. Philip Reynolds, jr., was appointed Clerk; Daniel Dygert, Sergeant at Arms; Alonzo Crosby, Door Keeper; and Samuel Campbell, Assistant Door Keeper.

In both Houses, resolutions to provide the members with newspapers not exceeding the cost of two daily papers for each, were passed. The Governor's Message was received and read, and then both Houses adjourned.

The Governor's Message is of most inconvenient and unprofitable length. It is a mistake in every sense thus to spin out these annual communications, converting them, as it were, into elementary treatises upon every subject they may touch. Bating this objection, the message of Governor Marcy, confines itself as it should do, to State affairs; and of them it gives a flattering, though we doubt not, just view.

The State Prisons more than support themselves, and the number of convicts is decreasing. The Public Schools embrace, it would seem, more than half a million scholars. The Canal receipts exceed largely those of former years; and the Canal fund after buying up a million and a half of the Stock at a high premium, will, in two years, be equal to the whole outstanding debt. Flattering as is this perspective—in regard to new routes of internal improvement, the Governor advises a cautious course. So too, in respect of the the numerous applications for new Banks, he warns against the perils of excess. With these few remarks—and we have room for no more—we dismiss the Message.

NAVAL LYCEUM.—Messrs. Teller Turell and Co. have presented to this institution three fine engravings, in superb frames. One of *Morghan's* last supper, one of Gen. Scott, and one of Washington.

PITTSBURGH, Jan 2.—Our *River Navigation*.—A friend has handed us a statement of the steamboat navigation during the last month. During the month the arrivals and departures of boats were not interrupted during a single day—and there is now as little prospect of the closing of our river as there was in October.

Arrivals,	-	-	-	80
Departures,	-	-	-	74

[Gazette.]

The President has recognized Thomas Dixon as Consul, ad interim, of the King of the Netherlands, for the port of Boston. He has also recognized E. A. Homer, as Consul of Belgium, at Boston. Also, Henry Lefebure, as Consul of Belgium, at Charleston, S. C. Also, C. F. Hoyer, as Consul of the Grand Duke of Baden, at New York.

The following gentlemen have been elected Directors of the United States Bank, for the ensuing year:

Nicholas Biddle,	Daniel W. Cox,
Manuel Eyre,	John Bolton.
Ambrose White,	John R. Naff,
John Sergeant,	William Platt,
James C. Fisher,	Jno. Goddard,
John S. Henry,	Robert Lenox, of New York,
Charles Chauncey,	John Rathbone, Jr. N. York,
Matthew Newkirk,	Geo. Huffman, of Maryland,
Lawrence Lewis,	Roswell L. Colt, Maryland,
John Holmes,	Jno. Potter, of S. Carolina.

Those in italics are new Directors.

Nicholas Biddle, Esq., has been re-elected President of the Bank of the United States.

The Banks.—The abstract of the returns of Banks in Massachusetts, showing the state of said Banks, on the first Saturday of October, 1833, prepared for the use of the Legislature, was distributed this morning. We learn from this document that on the day mentioned the state of the Banks was as follows:

Capital Stock paid in	\$38,236,250 00
Bills in circulation	7,889,110 67
Net Profits on hand	1,293,279 54
Balances due to other Banks	2,881,447 50
Cash deposited, &c. not bearing interest	3,716,182 37
Cash deposited, bearing interest	7,949,440 53
Due from the Banks	52,120,113 11
Gold, silver, &c. in Banks	922,309 84
Real Estate	791,891 77
Bills of Banks in this State	1,646,3 9 53
Bills of Banks elsewhere	250,052 43
Balances due from other Banks	3,363,716 29
Due to the Banks, excepting balances	45,261,003 09
Total resources of the Banks	52,132,218 69
Amount of last dividend	822,225 00
" " reserved profits	709,438 83
Debts secured by pledge of stock	847,549 54
" due, and considered doubtful	207,239 11

Rate of dividend on amount of capital of the Banks, as existing when dividend was made, 3 and 1-14 of 1 per cent. nearly.—[Transcript.]

A fire broke out at mid-night on Wednesday last, in the wing of the Pennsylvania Hospital, allotted to the insane. Happily, the inmates were all removed in safety, to another part of the building, and the flames were speedily extinguished by the firemen. Great praise is awarded to Miffin Wistar, a young physician, resident in the Hospital, for his coolness, and the good arrangements immediately adopted by him for the safety of his helpless patients.

The Mercantile Advertiser of this morning announces on the authority of a letter from Matanzas, the death there on the 14th ult.: of Col. *Dewitt Clinton* son of the late governor Clinton.

"Domestic Manners."—Mrs. Trollope was recently brought before the London Police for unmercifully beating a female domestic. We suppose that the old hag's dislike of American "*help*," grew out of their refusal to be flogged.—The Yankees are peculiar in their "*notions*" about flogging. One way and another, Jonathan's doggedness upon this point, has been the cause of much trouble to John Bull.—[Albany Evening Journal.]

LITERARY NOTICES.

NO. IX.

CLEVELAND, OHIO, NOV. 15.

I took my passage in the stage for this place early in the evening three days since, and having at a late hour bade adieu to more than one whose friendship I trust will not be the less enduring, that it was made in so brief a space of time, retired to my chamber to catch a nap before my morning's ride. The clock was striking three, when, at the call of the porter, I arose, and descended to the bar-room. The attentive landlord himself in waiting, was ruminating before a large coal fire, and stretched upon the floor in a corner, lay the tired domestic, who, having just fulfilled a part of his duty in calling the various stage passengers, was catching a dog-nap in the interval of the stage's calling. The flavor of last night's potatoes still hung around the scene of so many symposia, and the fragrance of more than one recently smoked segar stole, charged with the aroma of whiskey, upon the senses. Cold as it was, I was not sorry to snuff a less scented atmosphere, as each stage that passed the house in succession hurried me vainly to the door. My own proper vehicle came at last, and by the light of the stage lamps, the only ones by the by, which shone through the sleeping city, I swung myself to the driver's box, and took the traveller's favorite seat by his side.—It was as dark as Erebus when we crossed the bridge over the Alleghany, and looking back when we had passed the gate, and were turning into the village, I could distinguish nothing of the city opposite, but the red glare of a furnace which shot out from the bank of the river and glowed an inverted pyramid of light upon its waters. Keeping on our way, the massive walls

of the state prison, with their circular towers and octangular area, frowned like some old Moorish castle over our path, as we drove beneath their dun-colored battlements, and passed the last environs of Pittsburg. It was, I confess, with some softness of heart that I bade a last adieu to a spot where the politeness and hospitality of the inhabitants had made my time pass so pleasantly. I must, however, have been *de trop* among my new acquaintances, had I remained much longer: for in Pittsburg every one is so occupied with business, that the time bestowed in attentions to a stranger is a sacrifice of some importance. I have since been much vexed to find, in looking over my papers here, that a letter of introduction, from a most flattering source, to the U. S. officer now commanding at Pittsburg escaped me untirely. I was chagrined the more, inasmuch as I should both like to have visited the arsenal, and to make the acquaintance of the valued officer, who has charge of it. I had not, however, this reflection to annoy me as, wrapped up warmly, I now rode along, watching the cheerful dawn streaking the east with pencillings of light, and dappling with ruddy rays the broad bosom of the Ohio. As the morning gradually broke, I discovered that the banks of the river presented a different appearance from what they did when I sailed along them ten days before. The November winds had been at work in the woods. The gorgeous panoply of Autumn no longer hung on the forest. The trees stood bare in the growing sunlight, and the thick strewn dead leaves rustled to the tread of the grey squirrel, that leaped from the naked boughs by the road side.

We stopped to breakfast at a low log-built shantee, within a stone's throw of the river, and being asked into a narrow chamber, half parlor half kitchen, I had for the first time an opportunity, as we collected around the breakfast table, to survey my fellow passengers. They were chiefly plain people, small farmers and graziers, returning perhaps from market, where they had been to part with their produce. Their manner, like most of my countrymen of the same class, was grave and decorous at table to a degree approaching to solemnity, though they ate with the rapidity characteristic of Americans at their meals. The ceremony of the board commenced by the oldest man in the company's taking a beef stake before him, and cutting it into small pieces with his own knife and fork. He then passed the dish around to each, and finally when all were served, helped himself. The bread was in the same way circulated by the youngest of the company, and then each having as fair a start as his neighbor, we all fell to work with a lustihood that would have done beef-eating Queen Bess good to have witnessed. The appetites of those present, were generally sharpened by the morning's ride; and, maugre the huge piles of buckwheat cakes that smoked along the board, flanked each by a cold apple pie, the beef stake was decidedly the favorite dish; and was meted out again and again, by the same knife and fork that played a private part the whiles for the stout yeoman who thus plied them for the public good.—Your banbox bred *elegant*, who was ignorant that the Spaniards and the Turks, the two most polite people in the world, thrust their fingers into the reeking bowl of *olla podrida*, or the smoking dish of *pilau*—while, like our sturdy Pennsylvanian, they always help their fellow travellers of the caravanserai, or *posada* before attending to themselves—might have turned up his nose in a transport of Trollopism at such refinement. The charge of vulgarity, however, would rest only with him, who, mistaking the conventional rules of society for the essential principles of politeness, should measure the manners of strangers by the standard of his own narrow circle. There was but one of my fellow passengers, I observed, who ate with his fork. He was better dressed and sat somewhat apart from the rest, interchanging with them none of the homely but hearty civilities, which

they proffered to each other. I set him down as some Eastern shop-keeper, who, though he might have been envied by a Chinese for the chop-stick dexterity with which he managed to chuck the particles of food into his mouth from a two pronged fork, might better have passed the time, spent in acquiring his slight of hand, in gaining real good breeding, from those whom he evidently sat down in his own mind as far beneath him.

Pursuing our journey, we stopped soon after to change horses at *Economy*. I was much disappointed in not having even five minutes to look through this celebrated village, where the German Rapp has so successfully raised a community, who labor in common, and own all their property only as trust members of a corporation. I saw hardly as much of the town, thus passing its suburbs inland, as when sailing by the front on the Ohio. It struck me as remarkably neat, however, and it being Sunday, a perfect silence seemed to reign over the village. Rapp, I believe, unlike most of his co-community-mongers, retains religion, not only as incident to, but an essential feature of, his system. Had it been otherwise, the attempt to form such an establishment could hardly have succeeded as it has. Religion I believe to be an instinct of the human mind—the only one except that of self-preservation, with which we are constituted. It is a feeling which as palpably prompts us to seek a God and to worship him, as does the instinct of a bird suggest the season of building her nest and the materials of its construction. The form of her frail fabric varies indeed with the climate in which it is built, and the character of the winged artificer. But the haughty temples of Heathenism, the sumptuous mosques of the Mussulman, and the Christian's humbler house of worship, may each find a semblance on the towering cliffs or tall tree top, where birds of prey alone will build—in the embowered copse where the luxurious dove delights to brood, or mid the lowly rushes where the lapwing's fragile nest is made. There is, indeed, a stolid race of birds who deposit their eggs upon the barren shore, leaving the sun to vivify or the sea to scatter their contents as chance may determine. But stupid as their offspring must be, who, in constructing an ovary, made no provision for the interesting wants of the rest of the species, because this particular genus is so coarsely constituted. Let us thank Heaven, when, thinking of the privileges of which the intrusive bigotry of foreign infidels at times would strip us, that in our free forest, and there are fields, hills, and groves, where religion, unshackled as a new-fledged bird, may build her altars how and where she pleases.

Our route continuing along the river, we soon passed a fine elevated field on the bank, where Gen. Wayne—or Mad Antony, as he was more familiarly called—encamped with his army that encountered the Indians so successfully near the Miami of the Lakes.

The stone fireplaces of the soldiery, now overgrown with turf, were, with a few other scattered marks of the encampment, discernible upon the ground; and they suggested to one of the passengers the well-known anecdote of the General having one of his men tried and shot for desertion because he had without permission from his officer, accompanied an only brother, his visiter at the camp, a few miles on his return home. The example was a terrible one, but the condition of Wayne's army, from which the men were daily dropping off, strongly required it; and, I confess, that in military affairs I respect the firmness equal to such an occasion too much to merge my admiration of the unblenching disciplinarian in sympathy for the unfortunate sufferer.

We reached the thriving town of Beaver about noon, and crossing the creek of the same name by a high wooden bridge, struck inland, and soon lost sight of the beautiful Ohio in

the broken country that here approaches its banks. A cold shower drove me for protection inside of the stage, and there wrapped up as comfortably as I could, I passed the night. The passengers had gradually dropped off along the road, leaving only a solitary country merchant and myself. We beguiled the time for a while in conversation, and then, as midnight came on, and he grew drowsy, I resigned myself to the same influence that had begun to send sounds any thing but musical from his "innocent nose." Awaking with the sun, I found that we were in the midst of new clearings, the road leading through a level country as far as the eye could reach, and having its sides faced beyond the fields with trees, whose tall stems and interlacing summits stood like giants locking arms along the highway. I must now be in Ohio, thought I, and I was right. The effect of this magnificent vegetation was striking even at this season; but after riding for half a day along such a wood, with not a valley to break the view, nor a hill to bound it, it could not but be monotonous. We passed two lakes in the course of our ride, approaching one of them near enough for me to see that it was a clear sheet of water, with a pretty yellow sand beach. But, though shut up by woods, it wanted entirely the wild yet gentle picturesqueness of the lakes I have seen among and near the highlands of the Hudson; much less could it boast of the savage grandeur of those which form the sources of that princely river.

The most interesting objects on this route are decidedly the growing towns and hamlets which abound along the road. Some of them have been manufactured only this season, and it is really surprizing to see the rude log huts of two years back stand side by side with the tasteful looking dwelling of yesterday, like the old and new branches of one flourishing tree; brick churches and taverns with handsome porticoes the while sprouting up in the same field of stumps. In one village called Hudson, particularly, where by the way much good taste is exhibited in the private houses, the progress of improvement is said to be as perceptible as the rise of the tide at the sea board. I could not, however, discover a palpable growth in the place from the time we sat down to dinner till hurried away from table by the call of the stage-driver. This though might be attributed either to the rapidity with which we despatched our meal, or to my optic nerves not having yet gained the true western nicety. I shall seize the earliest opportunity of practising over a rifle barrel.

We reached Cleaveland during a heavy shower long after nightfall. The roar of the surf reminded me of Rockaway, and the first view of Lake Erie the next morning was really grateful to my eyes. I felt while walking along the high esplanade of turf which here forms its banks, and upon which the town is built, like one who has just come out of a pent-up chamber into the full and free air of heaven. The effect of coming on such a wide expanse of water when just emerging from the forest, is much greater than when, after long riding through an open country, you view the ocean stretched beyond its shining beach.

Cleaveland is very prettily situated upon the lake. The Cayuhoga makes a bend around a high bluff as it passes into the inland sea which receives its waters, and, on the level peninsula thus formed, is built the town. The harbor, naturally an indifferent one, has been much improved by running out a pier from either side of the river, where it debouches into Lake Erie, and there being now but few better ports on this side of the lake, Cleaveland must become one of the most important places on its waters. The adjacent region is, I believe, not remarkably well suited to agricultural purposes, but there is an immense tract of the most fertile country inland which looks to Cleaveland for the chief outlet of its products. This will account for the rapid rise

of property here, which is almost incredible, building lots in some places commanding now as many thousands as they did hundreds of dollars five years since. The town, which can already boast of a public library, a fine church, two capital taverns, and many handsome private dwellings, is laid out with broad streets and a spacious square in the centre. The business part is as yet beneath the bluff, where a single winding street runs along the bank of the river toward the lake; but the main street above is already the scene of much bustle, and bears about the same relation to that below as Broadway does to South street in your city.

I have been happy here to meet with some old school fellows settled in the place—where indeed among our wandering people can one tread without finding an acquaintance?—and this morning I was agreeably surprised by finding an English groom waiting at the door for me with a fine saddle horse, and mentioning that my friend, its owner, would soon join me with another. We first rode out through a clearing, back of the village, and enjoyed a very pretty prospect of the Cayuhoga winding through a piece of rich meadow land below us, and affording, as the high grounds recede at its entrance into the lake, a striking view of Erie in the distance. Returning upon our tracks, we passed the village on the east, and then rode westerly along the shore of the lake. The banks, which are high and covered with sod on the top, are here composed of clay and gravel: on the surface they appear perfectly firm, but for the distance of nearly a mile along shore they have sunken, or are sinking, to the breadth of about 300 feet and slid off into the lake, whose waters thus swallow building lots worth an immense amount of money. The cause is believed to lie in quicksands beneath, and it offers a singular phenomenon to stand on the shore below, and marking the sunken platforms of earth behind, you see where half an acre of clay has risen through the sandy beach in front, within a few inches of the surface of the water.

The treacherous attributes of the shore suggested to my companion, who, though young, has been a traveller in his day, an incident he witnessed while journeying through some of the remote provinces, which would make no feeble subject for the pencil of Weir or Inman. He had ridden with an English gentleman for many hours through an unsettled country where not a drop of water was to be obtained for their horses, when, coming suddenly upon a clear stream sparkling over its bed of yellow sand, their weary beasts sprang forward simultaneously to drink from the grateful current. A break in the bank caused their riders to rein up and dismount, retaining at the same time the loosened reins in their hands, while their horses stepped down to the margin of the brook. The American, finding that the deceitful bottom yielded as soon as touched, jerked his terrified beast from the fatal spot, while as yet his fore feet were only immersed in the quicksand. But the horse of the Englishman, in his eagerness to get at the water, made but one step to destruction. He sunk floundering to his shoulders before an effort could be made to rescue him; and then, as in struggles to extricate himself from the engulfing pool, he heaved his broad chest high above its surface, the sucking sands drew his quarters in a moment beneath them. The nostrils of the suffering animal dilated with the fierce death encounter, and giving that hideous cry—

"The cry of steeds that shriek in agony,"

he tossed his head frantically above his greedy grave—his mane fluttered for a moment on the shallow water, and the bed of the stream closed over him for ever.

H.

HISTORY OF THE HARTFORD CONVENTION, with a review of the policy of the United States Government, which led to the war of 1812—by THEODORE DWIGHT, Secretary of the Convention. 1 vol. 8vo. pp. 450. New York: N. & J. WHITE.—If history be

philosophy teaching by example, we have in this book a lesson which should not be lost on the present and future generations. The events of which it treats may now be considered dispassionately, and so completely historical, as not to disturb any existing relations of parties or partisans. These, indeed, since the day of the Hartford Convention, have undergone so complete a fusion, that many of its most vehement supporters are now found as vehement in behalf of the distinguished soldier, who, according to his own declaration, would have hanged all the members of that Convention under "the second section"—or any other he liked better. A generation of men have passed from the stage since that epoch; and by far the greater portion of those who now by their votes determine the march and character of this government, are of an entirely new generation. To the actors on the political scene of that day, they may therefore be said to stand in the light of posterity, and should judge with the impartiality of posterity the acts and motives of those times. To all capable of so judging, we hazard nothing in saying, that they will derive from Mr. Dwight's book, certainly instruction as to many interesting historical points, and as certainly in our judgment, the conviction that through party prejudice and passion, and the excitement of a state of war, the greatest injustice has been done to the motives, characters and acts of the distinguished and able men who composed the Hartford Convention. We give this opinion with the more confidence, because we have ourselves felt and surrendered to the force of the evidence here brought together and displayed with full effect, that in no way and at no time was any project entertained or proposition uttered by that Convention, or any of its members, *inconsistent with their obligations as members of the Union*. From peculiar circumstances, and, though disapproving the war, being then with a militia command in the service of the United States, and eager in common with every American to resent and avenge the outrages perpetrated by the enemy along our defenceless frontiers, the writer of these remarks did look upon the assembling of the Hartford Convention with most unfriendly feelings—feelings of which the influence has only yielded, even at this late day, to the demonstration of Mr. Dwight's book. If, therefore, to remove unfounded prejudice, or correct erroneous opinions, be to confer, as we think it is, a great benefit, we personally acknowledge our obligations, on that head, to this writer; and though we still hesitate as to the expediency, under any circumstances, in time of war, of such a Convention, we must admit that if ever circumstances could justify it, they existed for the New England States at that period. We have not the time, however, to enlarge upon these matters now; we therefore merely add in conclusion, that in the historical review of the policy of the government of the United States which led to the war of 1812, not less than in the more immediate records of the acts and proceedings of the Hartford Convention, all readers, even those who may think they have kept pretty accurately the run of public affairs, will find materials, public documents, and most significant public acts, brought into a juxtaposition, and made tributary to conclusions, which it will be more easy to condemn than to disprove.

A LECTURE INTRODUCTORY TO THE COURSE OF SCIENTIFIC LECTURES BEFORE THE MECHANICS' INSTITUTE OF THE CITY OF NEW YORK; delivered Nov. 27, 1833, by G. C. VERBLANK: N. York, G. P. SCOTT & Co.—In felicity of selection, of language, and of illustration, the topics presented in this discourse are alike remarkable. The taste of the scholar, combined with a practical acquaintance with the wants of the active and industrious classes—honest and safe because active and industrious—is beautifully displayed throughout; and examples of power to excite the noblest emulation in every mechanic, are drawn from the mechanic arts, to prove how important and efficient to great results, is the union of theory with practice, of science with manual skill. We wish our space would allow us to make some extracts; but it is impossible. We learn, however, with great satisfaction, that the whole address is to be printed in the next number of that excellent periodical, "The Mechanics' Magazine." It will then go widely into the hands of those for whose advantage and encouragement it was designed, and is so admirably adapted.

ADDRESS BEFORE THE PHI BETA KAPPA SOCIETY of Yale College, by EDWARD EVERETT New Haven: HAZ. HOWE & Co.—Mr. Everett could not treat of the subject of education, which is the leading topic of this address, and of its influence in moulding, civilizing, and refining the human race,

without eloquence and unction. Both are exhibited in this address; and although we think a little too much, perhaps, is conceded to the power of culture to produce, under the same circumstances, nearly, upon an average, equal results, none can deny, that on all natures, its influence is very great. We must make an opportunity at some other time, to extract the striking illustration adduced by the speaker, to show the effects of education—of the New Zealand savage, and the skilful mariner who, through trackless seas, conducts to the shores of that savage, so frail and complicated a structure as a ship.

AN INTRODUCTORY LECTURE before the Brooklyn Lyceum, delivered 7th November; by THEODORE EAMES.—We published some days ago an account of this creditable and useful association lately entered into in Brooklyn; and we have read with pleasure the discourse of Mr. Eames on the opening of the Lectures. It is a sensible explanation of the origin and uses of Lyceums, and of the benefits which they are so well fitted to ensure.

BIBLIOTHEQUE CHOISIE DE LITERATURE FRANCAISE, No's 11 and 12. Philadelphia: CAREY, LEA & BLANCHARD. New York: CHARLES DE BEHR.—This select Library of modern French literature is in some sense like the family libraries in English, a republication of entire books, but a republication in semi-monthly numbers. Each of these contains 60 pages; and we may say that care is taken to exclude from the work every thing that would induce a doubt about putting this "library" into female hands.

LA FRANCE LITTERAIRE, No's 1 and 2. New York.—Another French periodical is here before us—well printed, and of well selected contents—appearing every fortnight, so as, at the end of the year, to constitute six large 8vo. volumes—and sell for four dollars per annum. We confess our gratification at thus seeing the current literature of France naturalized among us; and trust that this work, which is in the French what Littell's excellent *Museum* is to the English periodical writings of the day—a tasteful and judicious selection of the best—will meet ample encouragement.

THE SOCIAL EVILS AND THEIR REMEDY—By the Rev. CHAS. B. TAYLER, M. A. 1 vol. N. Y.—HARPER & BROTHERS.—They who have read "The Records of a Good Man's Life," need not be told by us that the series of narratives of which that now under notice is the first, from the same pen, is of high merit and holy aims. The idea of this series is, we think, evidently borrowed from the tales of Miss Martineau; and from some expressions in the reverend author's preliminary address to his readers respecting political economy, and what he may consider "right views thereof," and the necessity of teaching it, always as subordinate in claims and interest to "Christian economy," we are led to infer, that he considers the pre-eminence given in those tales to motives connected with present interests and wants, as undervaluing the higher motives derived from and inculcated by Christianity. We should regret this, for we believe political economy to be, not only in harmony with the dictates, but conducive to the influence, of religion, and as aiding by the intelligent forethought and the spirit of order and method which it induces, the spread of all other truths, and of that most especially which is pre-eminently THE TRUTH. It would, therefore, as we apprehend, be doing a real disservice to both political economy and religion that so just and reasonable a thinker as Mr. Tayler should considerately sanction the idea that there is any incompatibility between them. But as our apprehension on this score is rather surmise than certainty, we dismiss it, for the present, to say of the first narrative that it is most happily conceived and carried on; excepting, perhaps, a too obvious design and display of the means by which indeed in every condition of life good principles can alone be practically founded and preserved—a belief in, and habitual resort to, the pages of the revealed volume—but which may fail of their effect upon unwilling or unaccustomed natures, by being put forth too prominently at the onset.

This first volume is addressed to mechanics, and its object is to inculcate upon them the absolute ne-

cessity of order and degree in all societies, the danger of listening to the preacher of infidelity and turbulence, and of rejecting the old and wise ways of happiness, to seek after shorter and pleasanter paths, under leaders who are not less blind than those they set up to guide. It inculcates the sound and wholesome doctrine, that respectability, usefulness, and duty, in whatever walk of life we may be placed, depend, not upon our vocation, but upon our manner of fulfilling it; and that there is no honest calling, be it ever so humble, that he who follows it may not dignify and adorn, by a well-ordered, industrious, and above all, religious life.

The next number of "Social Evils," is to treat of the other sex, under the title of "The Lady and the Lady's Maid."

AN ADDRESS, DELIVERED BEFORE THE GENERAL TRADES UNION OF THE CITY OF NEW YORK; BY ELY MOORE, President of the Union. New York: JAMES ORMOND.—This is, in many points of view, a remarkable address. The occasion, the association to which it was delivered, and the language which it holds, are all peculiar and unusual. The Trades Union, as we gather from this pamphlet, is instituted by the producing classes, "in order to guard against the encroachments of aristocracy, to preserve our natural and political rights, to elevate our moral and intellectual condition, to promote our pecuniary interests, to narrow the line of distinction between the journeyman and employer, to establish the honor and safety of our vocation upon a more secure and permanent basis, and to alleviate the distresses of those suffering from want of employment." In plain and direct language, this is, we presume, an association of journeymen of different trades, with some masters, perhaps, among them, to regulate by combination, their own wages, and by co-operation of many to sustain the efforts of those of any particular trade in enforcing their "natural and political rights." That such a union is contrary to the common law, is admitted by the speaker himself, who, however, insists, that such law being in his judgment at variance with the genius and spirit of our institutions, it ought to be abrogated, and, meantime, he and his associates act as if it were. But in our opinion, the general scope of Mr. Moore's doctrines is more in hostility with the genius of our institutions than that doctrine of the common law which he condemns. We may say, by the way, that to the reasonableness of this doctrine we do not assent, and can perceive no reason in natural justice, or even in sound policy, why men may not, and should not, if they choose, combine for higher wages—so they do it voluntarily, each for himself, and without the use of force or menace against those of the same craft, who do not choose to join the combination, or against their employers—leaving to masters the same right to combine, if they choose, against workmen, and to each party the risk and loss of such attempts. The moment, however, that by force or intimidation a reluctant journeyman is made to give up the wages he was content to work for, and join the combination, that moment an offence against social and individual rights is committed, which should be vindictively punished. With this understanding, we are content to go with Mr. Moore in doing away the common law offence of combination. Mr. Moore's principles, however—by their tendency to create distinctions between classes of citizens, all alike equal in their rights and before the law; to combine the whole active industry, as it were, of the country against its wealth; and to impose—if they could be enforced, which they never can be—an arbitrary value upon what is in its nature ever varying, differing at different times, and at all times in different individuals—labor and skill,—do strike directly at the freedom, equality and security both of person and property guaranteed by our institutions. "Aristocracy"

is the hydra which "the productive classes" have, it is said, to contend against, and aristocracy is here explained to mean wealth. Now this aristocracy is within the reach certainly of every industrious man's reasonable hopes—however humble his commencement—and the wisdom of depreciating in advance, and rendering obnoxious, that which each and all are striving to attain, may well be questioned. It is indeed true that wealth, unaccompanied by education—in which term we include the culture of the heart, as well as of the understanding—is apt to produce arrogance and a certain scornful looking down upon those less fortunate competitors who yet toil in poverty; but this, so far from being a general characteristic, may be said to be almost peculiar to those who, having emerged from obscurity to opulence, without the restraints of moral and intellectual discipline, seem chiefly to value riches for the elevation at which they are thereby placed above those with whom they began life. In the way of overbearing, intolerant, coarse-mouthed and hard-hearted "aristocrats"—men who look upon poverty as a crime, and have none but words of harshness and reproof for misfortune—the most genuine, as well as the most offensive specimens are invariably to be found among persons of this description. Every observing reader must know, or have known, instances in point; and it is not the least curious part in such a history, that they who began life perhaps railing at aristocrats and aristocracy, and afterwards attained that enviable and much lampooned condition, are among the loudest frequently still to keep up the cry—of the truth of which, as implying harshness to inferiors, they judge from their own course; and of the efficiency of which, as a rallying cry to marshal the many against the few, they have had personal experience. But we are running on into a dissertation far beyond our purpose on sitting down, or our space. Of the talents of Mr. Moore, as they appear in this address, we are disposed to think well. Of his aims, and those of his associates, we disapprove, as subversive, in our judgment, of order, and illusory moreover in practice; yet we believe there is no premeditated purpose of evil in the "Trades Union;" and under due regulation, as conducing to emulation and mutual endeavors to enlighten and improve each other, and exalt each other's vocation, it might lead to good. We could wish, however, that Miss Martineau's tales were household volumes among the members of the Union; and we should not be sorry if the work noticed immediately before this, of Dr. Tayler, were also in the hands of each one of them. It is by such studies and with such guides that "the productive classes" will best assure their own happiness and respectability, and promote those of the communities of which they form so large and influential a part.

HISTORY OF THE CHURCH, from the birth of Christ to the present time, by CHAS. A. GOODRICH; 1 vol. pp. 500; New York, JUSTIN CARPENTER.—This is a curious compilation, which purports to give the history, not only of the church, but of all different sects, with biographical notices of their martyrs; which extends its notice to Mahometans, as well as Jews and Christians; and comprises, in short, or professes to do so, every sort of information respecting all sorts of creeds, rites and ceremonies. The book is divided into eight periods, each embracing a certain term of time. There are numerous wood cuts, withal; and the work, if executed with ordinary fidelity—of which we confess we have not yet read enough in it to enable us to judge—cannot but impart much useful and more curious information.

THE AMERICAN MONTHLY MAGAZINE, for January 1834. New York: M. BANCROFT.—This is a capital number, with papers in it that would do honor to the best Magazine extant. We would mention particularly "the Specimen of the Italian dramatists," and

"the Eve of St. Bartlemy." Good taste and poetical talent, as well as familiarity with the literature of Italy, are charmingly displayed in the first, and the thorough knowledge of the spirit of the times in which the second is cast, and the vigorous portraiture of character it exhibits, are quite remarkable. There are other papers of merit, but these bear the palm.

GREENBANK'S PERIODICAL LIBRARY, Vol. III. No's 7 and 8. Philadelphia. These numbers contain the autobiography of Galt, printed with the usual distinctness of this very cheap publication.

THE PARLOR JOURNAL. New York: PEABODY & Co.—This is a very flashy looking weekly; and if pretty types, pretty pictures, music, fashions and light talk and criticism, can make a work acceptable, this may hope to succeed.

GOVERNOR'S MESSAGE.

Fellow Citizens of the Senate and Assembly:

In performing the duty which requires me at this time to submit to your consideration the condition of the state, I feel peculiar gratification in being able to assure you that it is unusually prosperous.

As a member of the confederacy, we have no cause of alarm at any encroachment on our rights as a sovereign State. The General Government is moving in the proper sphere of its delegated powers, diligent to understand the interests committed to its charge, and devoted to the duties essential to the general security of the nation. Practising upon its avowed principle, of asking nothing that is not clearly right, and submitting to nothing that is wrong, it continues to maintain a friendly intercourse with all other nations, on terms of fair reciprocity.

The extraordinary attitude assumed at the commencement of the last year, by the state of South Carolina, in regard to the authority of the federal government, excited some apprehensions for the peace, if not for the stability, of the Union, and imposed upon that government, exceedingly delicate and embarrassing duties. We have great reason to rejoice that our national affairs were in the hands of those who were peculiarly fitted for such a crisis, and who were enabled by their wisdom, firmness and moderation, to conduct this unhappy controversy to a peaceful issue, without conceding any right belonging to the General Government, or giving any countenance to the novel and dangerous doctrine of Nullification.

Between this State and New Jersey a dispute has for a long time existed, concerning boundaries and jurisdiction. Several attempts have been heretofore made, to adjust this controversy in an amicable way; but they had all terminated unsuccessfully, and proceedings were instituted on the part of New Jersey, in the supreme court of the United States, to bring it to a judicial decision. The mutual desire of the citizens of the two states to preserve harmony between them, seemed to leave the way still open for an honorable compromise. The Executive of each state was last year authorized to appoint commissioners to effect this object. These commissioners have agreed upon terms of adjustment, which they deem to be equitable and mutually beneficial to the parties.—This agreement is not obligatory on either state, until it is confirmed by the legislature of each, and approved by congress. It is herewith transmitted for your ratification, if it shall be found, as I believe it will be, compatible with our honor and our interests. The Union is to be preserved and strengthened by concord among its members. The sentiments of patriotism, as well as a regard to our local interests, will inspire you with a desire to remove the only known cause that can disturb our friendly relations with any of the states.

From this view of our external relations, permit me to direct your attention to our internal affairs.—To the spirit of our free government, to the wise legislation of your predecessors, but, above all, to the kind regards of a gracious Providence, we are indebted for our present unexampled prosperity. No pestilence has been permitted, within the last year, to visit our citizens; our agricultural products have been abundant; manufacturing establishments have multiplied in all parts of the state; commerce has expanded beyond its former limits; enterprise is exerting its energies in all directions; and the gratifying evidences of moral and intellectual improvement are every where around us. Let it not, however, be supposed that this fulness of prosperity has superseded the labors of legislation. Evils exist that require

correction; and new wants are constantly disclosed, that cannot be fully supplied without your aid.

Every wise system of municipal laws necessarily contains within itself an adequate provision for the due execution of them. Laws are rendered effective only by the agency of public officers. The judiciary is an essential branch of all governments; to those of liberal principles it is, and ever will be, an object of much solicitude, and the more so in proportion to the sacred regard which is cherished for personal security and the rights of property. It must be accommodated to the duties devolved upon it. When we take into view the rapid increase of this state in population, and the still more rapid augmentation of its business transactions, both of which greatly multiply the labors of the judiciary, we must, I think, be convinced that our present establishment, though adequate to the public exigencies when first organized, now needs to be enlarged. Both the ability and the diligence of our higher courts are admitted; yet the business in them has so greatly increased, and the prospect of its further accumulation is so certain, that it has become your duty to deliberate on the means of affording relief. It is not so much to subserve the convenience of the courts overburdened with business, as to relieve parties from expense and loss, that such a measure has become expedient. Delay is not only attended with additional costs, but in many cases it is a denial of justice.

The organization of a Vice Chancellor's court in the city of New York, has fulfilled the public expectations of its usefulness. It is suggested whether one or two other similar courts, in other parts of the State, might not prove useful auxiliaries, not only to the Court of Chancery, but to the Supreme Court.—To such courts the equity business of the circuit judges might be assigned; and most of the interlocutory proceedings in the Supreme Court might be transferred to these judges. The pressure of business is on the Court of Chancery and the Supreme Court, and on a few of the circuit judges, in consequence of their Chancery business. If two Vice Chancellor's Courts should be organized, it might not be necessary to increase the number of judicial officers. Two of the circuit judges might be appointed to preside in them, and the number of circuits reduced to six. It is believed that six judges would be able to perform all the circuit duties, together with such interlocutory business as could be properly devolved on them.

If upon mature deliberation, this measure should not be deemed a proper or an effectual remedy for the public inconvenience, there appears to be no other course left, but to amend the Constitution, and thereby increase the number of judges, or create other courts to participate in the business of those which now possess general jurisdiction.

Judges, like all other public servants, have certainly a just claim to a fair allowance for their official services: and in settling it, due consideration should be given as well to the qualifications required for such stations, as to the arduous and responsible duties imposed by them. It is true that judicial offices are highly honorable, and are generally aspired to with better motives than a regard to the measure of compensation; but this circumstance does not render an adequate reward to judges less an act of justice, or a dictate of sound policy.

Economy is the virtue of republican governments, but it is as distinguishable from parsimony as from profusion. It requires that faithful public services should be fully, and no more than fully, paid; and it is as much the duty of the Legislature to bring to this standard, salaries that are too low, as those that are too high. In forming an opinion as to the compensation to be given to judges, it is proper to look at all the circumstances connected with the subject; to their situation, which necessarily debars them from all private pursuits; to their qualifications, which result from a union of moral worth, high intellectual powers, and extensive acquirements; to the services they are required to perform, which, in this state, are more important and laborious than those imposed upon the judiciary of any other state. If, in addition to these considerations, we compare the present compensation of the judges in our higher courts, with the salaries given to such functionaries in other states, or with the salaries formerly given here without the imputation of extravagance, we are, I think, necessarily brought to the conclusion that our judges are inadequately paid. I should neglect what I think due to an important department of the government, if I omitted to invite you to deliberate on this subject.

The business transactions of this state are almost wholly founded on credits. It should therefore be the object of legislation to provide for the faithful

execution of contracts. In 1831, an important change was made in the law on this subject, by abolishing imprisonment in certain cases. This change has, to some extent, excited dissatisfaction among the people; but most of it, I believe, is to be ascribed rather to the defects of the law, than to its principle. Its real object is in accordance with the spirit of the age. No reasonable objection can be urged against exempting the honest debtor, who is without the ability to pay, from imprisonment; but great care should be taken to prevent such a wholesome provision of law from becoming a refuge for dishonesty and fraud. It was scarcely to be expected in such a case, that all the safeguards against abuses and perversions could have been provided, without the light of experience. This law has been nearly two years in operation, and its prominent defects are now developed, and I trust your attention will be carefully directed to devising adequate remedies for them.

Our penitentiary establishments are objects of great public interest, and must ever draw towards them the anxious regards of the legislature. The improvements by this state in prison discipline, have been imitated by other states, and have attracted the attention of several governments in Europe. The commissioners sent from abroad to examine our penitentiaries, and ascertain their practical operation, have bestowed on both high commendation. By means of these establishments, we have been enabled to meliorate our criminal code, with safety to the rights of persons and property, and in a great measure to relieve the people from a heavy annual burden for the support of convicts.

The operations of the state prisons continue to present favorable results. The number of persons received into them during the last year, is less than that of the previous year: and the avails of the labor performed by the convicts have defrayed the ordinary expenses of these establishments, and yielded a surplus income of eleven thousand eight hundred and eighty dollars and thirty-one cents.

It was feared that the diminution of the number of convicts in 1832, from that of 1831, was to be ascribed to the effects of the cholera, which had interrupted some of the courts; but the reports of the past year have removed this apprehension, and proved, that while our population is rapidly increasing, crimes punishable in the state prisons are decreasing. The whole number of convicts in the Auburn prison on the first day of December last, was six hundred and seventy-two. One hundred and seventy-one had then been received since the first day of January last, which exceeds by thirty-nine the number received in the previous year. The whole number of convicts in the Mount Pleasant prison on the first day of December last, was eight hundred and thirty-three; and the number received previous to that date, in 1833, was two hundred and nineteen, which is seventy less than the number received in the preceding year.

The earnings of the convicts in the Mount Pleasant prison, during the last fiscal year, which closed on the thirtieth of September, were sixty-seven thousand five hundred and forty-eight dollars and sixty-five cents; which exceeds the ordinary expenses of that establishment, not including therein the charge of the corporation of New York for keeping the female convicts, three thousand two hundred and fifty-five dollars and twenty-six cents. A part of this surplus has been expended in building a range of workshops, two hundred and forty feet in length. No appropriation, either for the support of this prison, or for any additional improvements to it, will be required for the current year.

The earnings of the convicts in the Auburn prison, for the last fiscal year, were forty-nine thousand six hundred and sixty-five dollars and fifty cents. This sum produces a surplus, after deducting the ordinary expenses of the prison, of eight thousand six hundred and twenty-five dollars and five cents.—Some portion of this surplus has been expended in altering and repairing the south wing of this prison. This work was deemed necessary for the preservation of the edifice, and for accommodating the establishment with a chapel and mess-room. From the representations of the officers, and from personal observation, I am convinced that a regard to the safety of this prison, and the accommodation of its business, requires that its enclosure should be considerably enlarged. This improvement cannot be made without your authority, and will probably involve an expenditure beyond the surplus income of the establishment.

Although we have done much for the improvement of prison discipline, much more remains to be done. There is one class of criminals to which it cannot be extended without another establishment. Every

year's experience confirms the propriety of the repeated and urgent recommendations which have been made to your predecessors, in favor of providing a separate prison for female convicts. The number of these now is 53. Twenty-three of them are in the Auburn prison; but the salutary influence of its admirable discipline cannot be fully extended to them for the want of proper accommodations. The remaining thirty are confined at Bellevue in the city of New York, at the annual charge of one hundred dollars for each convict, paid by the State to that city. Even economy, which is less to be regarded in this matter than other considerations, would be promoted by such an establishment. Most of the labor of erecting it, might be performed by the convicts of the Mount Pleasant and the Auburn prisons. I earnestly invite your attention to this subject.

Whatever diminishes minor offences will also diminish those of a higher grade; we ought, therefore, to apply our correctives to the incipient steps of transgression, with the double view of preventing crimes, and of reforming offenders. If long experience has taught any one lesson on this subject more clearly than another, it is that the association of criminals in idleness, with opportunities of unrestrained intercourse, renders reformation almost hopeless, and mutual contamination nearly certain.

The persons convicted of minor offences, are more than three times as numerous as the State prison convicts; and more than half of them are sentenced to be imprisoned in the county jails. As places of punishment, jails are much more objectionable than the State prisons were before their discipline was improved. Until establishments for punishing these offenders are provided, to which the salutary discipline of the state prisons can be extended, it is in vain to expect any considerable diminution of crimes, either of the lower or higher grade.

There is no institution partaking of the character of a penitentiary, that can be regarded with so much satisfaction as the House of Refuge for juvenile delinquents in the city of New York. The benevolent and humane individuals to whom this institution owes its existence, and who have generously devoted their labor and means to rear up and sustain it, have not been disappointed in the only reward they expected—the satisfaction of having been instrumental in rescuing many fellow-beings from misery and crime, and turning them into the path of virtue and usefulness. This institution admirably combines the advantages of education and moral instruction with a preparation for business pursuits. Its guardian care does not cease with its direct control over these delinquents; it follows them into society, and secures them from relapsing into criminal conduct by placing them in situations where they can, not only obtain a livelihood, but enjoy the ordinary means of becoming useful citizens.

It has been satisfactorily ascertained that most of those who have gone from this institution, have since pursued a virtuous course of life, and many of them are already established in business with the fairest prospects of success. This happy result is doubtless to be attributed, in a great measure, to the supervision over them which extends beyond the period of their actual imprisonment, and provides for them a proper employment. I am persuaded that some assistance of this kind afforded to convicts when first discharged from the state prisons, would, in many instances, prevent their relapses into crime. The House of Refuge now contains two hundred and thirty-three inmates; but it never has had as large a number as it could accommodate. This, I am sure, would not be the case, if magistrates who have the power to send juvenile delinquents to it, were fully apprised of the decided advantages of its discipline over any other mode of punishment.—The managers of this establishment are making laudable efforts to enlarge it, so as to accommodate colored children; but they have not yet been able to raise the means required for this object. If they should be obliged to solicit aid from the legislature, the merits of the application will entitle it to a favorable consideration.

There are two institutions in this state for the instruction of the deaf and dumb—the New York Asylum, and the Central Asylum at Canajoharie. The number of pupils in both is one hundred and sixty-five. One hundred and thirty-four of them are in the school at New York. Ninety-six of these and twenty-four in the Central Asylum at Canajoharie, are educated by the state at an annual expense of fourteen thousand four hundred dollars.

By an act passed in 1822, the supervisors are au-

thorized in certain cases, to select from their respective counties, indigent mutes, and send them to these institutions, which are required to instruct them on such terms as the state pupils are received. This authority has not been exercised by any of the counties except those of New York and Montgomery; not for want of fit subjects, but probably from an unwillingness to levy the expenses that would be thereby incurred. It is worthy of your consideration, whether the exercise of this authority, which is now optional with the supervisors, might not be properly made an imperative duty.

Interesting as is this class of persons to our humane feelings, and claiming as they certainly do your sympathy, and a liberal degree of your care and patronage, there is another class, larger in number, and still more unfortunate in condition, who have a rightful claim to a greater share of your compassion and an equally liberal measure of your assistance. I refer to the insane—and more particularly, to the insane poor. We should be deaf to the most powerful appeal of suffering humanity, and wanting in gratitude to God, who has endowed us with the faculty of reason, and blessed us with abundant means of administering to the wants of others, if we did not use both, for the comfort, and, to every practicable extent for the cure of those who are deprived of these gifts. It, indeed, the diseases of the mind lay beyond the reach of human agency, it would be still our duty to afford these sufferers all the comfort and consolation which could be enjoyed in such a forlorn condition. But recent experience has proved, that in a few cases only, is their doom irrevocable. Medical science and mental philosophy have finally obtained an almost entire dominion over these maladies. There is, however, this peculiarity in the cases of insanity, that little hope of effecting a cure can be indulged, without the conveniences of proper institutions. The Asylum at Bloomingdale, under the management of the Governors of the New York Hospital, is the only establishment affording accommodations for insane patients, which has received any assistance from the public treasury. The state has already paid, for founding and supporting it, one hundred and seventy thousand dollars; and has made provision for an annual payment towards its support, of ten thousand dollars, until the year 1857. It is, however, inadequate to the public wants. Besides, this institution is, in effect closed to that class of insane patients presenting the strongest claims for your bounty—to those who are unable to contribute to their own maintenance. Poverty is sometimes the cause, and oftener the consequence of mental derangement. For those who labor under this double affliction, nothing has been done specifically by the legislature. By the census of 1825, it appears that there were in this state, eight hundred and nineteen lunatics; and if the number has increased proportionably with the population, it cannot be less at this time, than one thousand. Of these, seven hundred at least, are paupers, and most of them utterly beyond all reasonable hope of recovery, without legislative aid. If any thing were wanting to urge you to vigorous action on this subject, and call forth your patronage in behalf of these sufferers, it will be found in the well authenticated fact, that of recent cases under the treatment of the best regulated asylums, eighty and sometimes ninety patients in an hundred, have been restored, and even those who have been long neglected and cruelly misused, are not in a hopeless state. If the victims of disordered intellects had not been deprived of the usual means of exciting public compassion, or if they could have come forth from the places of their confinement, to exhibit their deplorable condition to the public eye, I cannot believe that a provision for their relief would have been delayed to this late day. If the claims of humanity in this respect, have been disregarded, you have now the power, and I doubt not will feel the disposition, to satisfy them.

The blind also, are another class of persons upon whom misfortune had laid a heavy hand, and who have a just claim to something more substantial than bare sympathy. Books have recently been made with embossed letters, whereby they are enabled, after a proper course of instruction, to read with considerable facility. By this ingenious contrivance, a new avenue is opened to their minds, and simpler means of knowledge brought within their reach. The number of persons suffering under the deprivation of sight, in this state, cannot be accurately estimated; but it is very considerable—sufficiently so, at least, to make their condition a subject worthy of your attention and kind regard.

The establishment of county poor-houses has been generally attended with beneficial results. In them, paupers enjoy more comforts than could be extended to them in the former way of providing for their sup-

port. In most cases, they receive kind treatment; the able are put to work; the sick are carefully nursed, and well supplied with medical attendance; the young are furnished with the means of education, and enjoy opportunities of moral and religious instruction. The general burden of support has been greatly diminished wherever these houses have been established and properly managed. This system, particularly in what regards its police, is undoubtedly susceptible of some improvements. All who are received into these houses should be treated with kindness; but the idle should not find them places of repose from labor, if they are able to work; nor should those who have been brought into them by their vices, be allowed opportunities for further indulgence.

There are many charitable and benevolent institutions in the State, and particularly in the city of New York, of great usefulness, which I would commend to your favorable regard. It is your duty to second individual efforts in building up and sustaining establishments, which are fitly designed to reclaim the vicious, to relieve the distressed, and to enlighten the ignorant.

From the consideration of subjects which relate to the relief of the unfortunate, I pass to those which regard public education and moral improvement. Republics should be ever mindful of this important truth, that to be free, man must be educated. Without a knowledge of his rights, he will never properly estimate nor long maintain them. Our enjoyments as individuals—our usefulness as members of society—our privileges as citizens of a free government, are all founded on education. These obvious propositions show at once the vast importance of our system of public instruction, and the necessity of so improving it as to give to its operations the utmost extension and the greatest efficacy. While we are reposing our hopes for the continuance of civil liberty upon the general intelligence of the people, it becomes our duty to see that this foundation is laid broad and deep. By providing an adequate fund for the support of common schools, the legislature discharge but a part, and by far the least difficult part of their duty towards educating the people. They must secure its efficient application to the proper objects. In this respect, there is, in my judgment, a manifest defect in our system. Little as yet has been done to provide teachers properly trained for this pursuit. Without well qualified and skilful instructors, the amplest funds will prove comparatively useless. It is scarcely less important to establish a wise plan of supervision, not so much for the purpose of securing a faithful application of the public monies, as to introduce the most effectual modes of teaching, and the best systems of instruction.

The mere imposition of tasks, which are usually performed as an enforced duty, falls far short of the ends that should be aimed at. Emulation should be awakened in the minds of the pupils, and the acquisition of knowledge made a desirable object. When they once become sensible of the great advantages of education in the ordinary pursuits of life, and of the numerous enjoyments springing from the cultivation of their mental faculties, the difficulties of the work are nearly overcome, and the duties of the government are in a great measure performed. They then become their own teachers, and will seek opportunities, and furnish themselves with means of instruction.

Republican governments are the most deeply interested in the cause of education, and from them it is reasonable to expect vigorous efforts for the general dissemination of knowledge among the people; yet, I regret to see, that in this respect, we fall far behind even some of the monarchies of Europe. Several of the German states, particularly Prussia, are doing much more for the education of the people, than we are. If this state has failed to take the lead in well doing, in the cause of popular education, let it be the first to follow the example of those who have excelled us.

I fear there is too much reason to regret that more zeal is not felt, and greater efforts made, to improve the condition of our primary schools throughout the state; yet there are places where their importance is duly appreciated, and vigorous exertions have been made for their advancement. Justice requires that the example of the city of New York should not be passed with out notice and commendation. This city imposes annually a general tax, which now produces about ninety thousand dollars, for the support of its public free schools. They are under the management of a board instituted by the Common Council, called the Public School Society. This board are careful to select competent teachers, and to cause the schools under their charge to be often visited, and the course of instruction in them to be properly directed and vigilantly supervised by intelligent committees. The school established by "The General Society of Mechanics and Tradesmen," is liberally supported and wisely managed, and reflects great credit on the public spirit and intelligence of that class of citizens. A personal examination of these schools has convinced me that they are well conducted, and induces me to commend them to other parts of the state for their imitation, so far as circumstances will permit.

The results of our system of common schools throughout the state, will be fully presented to you in the report of the Superintendent. Eight hundred and twenty towns and wards, (being the whole number in the state,) have made reports to him for the year 1832. From them it appears that there were then nine thousand one hundred and seven district schools, in which five hundred and twelve thousand four hundred and seventy-five children were instructed. The whole number of children in these districts, between five and sixteen years of age, was five hundred and twenty-two thousand six hundred and eighteen.

The public moneys distributed to the districts, including one

hundred thousand dollars from the common school fund, and eighteen thousand five hundred and ninety three dollars and twenty four cents from local funds, amounted to three hundred and seven thousand seven hundred and thirty three dollars and eight cents; and the inhabitants of the districts raised for the same purpose, three hundred and sixty nine thousand six hundred and ninety-six dollars and thirty-six cents. These sums, amounting to six hundred and seventy-seven thousand four hundred and twenty-nine dollars and forty-four cents, except about sixty thousand dollars expended in New York for school-houses; were paid to teachers for their services. If to this amount were added the other expenses incident to this system, the whole sum expended for the support of common schools in that year, would be about one million one hundred thousand dollars.

The regents of the university distribute annually, from the literature fund, ten thousand dollars to the academies subject to their visitation. The number which partook of this bounty last year, was sixty-five; and the number of students in them was four thousand eight hundred and fifty six, which exceeds that of the previous year by six hundred and sixty eight. There are many other valuable institutions of the kind in the state, which do not participate in the literature fund. We have seven colleges, two of which are devoted to medical instruction. Some of them are firmly established and highly prosperous; the others are struggling with difficulties, for the want of sufficient endowments; but all, I believe, are in an improving condition. As affecting more extensively the general welfare, common schools are justly entitled to the first consideration and the most liberal patronage; yet seminaries of a more elevated rank ought also to be sustained and cherished for many reasons, and for this particularly, that upon them we must, in a great measure, depend for competent teachers of the common schools.

The subjects connected with the business pursuits of our constituents, next claim our notice. Among these, agriculture stands first in the order of nature, as well as in the rank of importance. It contributes so essentially to wealth, that the early writers on political economy regarded it as the only source of wealth. It furnishes the means of human subsistence, and supplies most of the materials for manufactures, and the chief articles for commerce. When the labor of the farmer is bountifully rewarded, all other kinds of industry partake of its success; whatever, therefore, is done by the government for the agricultural interest, redounds to the benefit of every other. There is no occupation which is so diversified in its objects, and requires such various knowledge to conduct it skillfully, as that of agriculture. This knowledge results from experiments in all climates, soils, and seasons, and is consequently to be derived from different countries. It receives large contributions from the mechanic arts, and from the sciences of botany, chemistry and natural philosophy. The patronage of the government can scarcely be directed to a more useful object than furnishing the means of collecting information on this subject, and of spreading it among the agricultural population. A board composed of practical farmers and men of scientific acquirements, would possess great facilities for concentrating this various and scattered information; and the best means of disseminating it among the people, would be afforded by a public institution, under the direction of such a board, where agriculture should be taught as a science, and practically illustrated as an art. The general interest felt for this branch of industry, will recommend it to your favor; and its intimate connection with the permanent prosperity of the state, will make you desirous of contributing to its advancement.

The citizens of this state have invested a large amount of capital in manufacturing establishments. The encouragement which this branch of industry has been most anxious to obtain, a protection against foreign rivalry, and this could be given only by the general government. The policy, as well as the right, of giving it, otherwise than as it incidentally results from the imposition of such duties on imports as are necessary to raise a revenue merely sufficient to support the government, has been contested. This interest has suffered by the frequency of legislation on the subject of the tariff, and by the uncertainty, as to the measure of protection, it would permanently receive. Hopes are now confidently entertained, that the existing laws will remain for some years without material modification. Should such be the case, there is reason to believe that our manufactures will flourish, and soon acquire a permanency which will enable them to withstand foreign competition.

Though commerce and agriculture are the branches of industry which seem to participate most directly in the benefits of our system of internal improvement, yet they are no more favored in this respect, than many kinds of manufactures and the mechanic arts. While our public works have been attended with local advantage, they have contributed, even beyond our anticipations, to the general prosperity of the state.

It was our fortune that the most practicable route for a water communication between the Atlantic ocean and the great western lakes, lay thro' our territory. This advantage was early discovered by the sagacity of the people of the state, and effectually improved by their enterprise. The internal commerce carried on through the Erie canal, aided as it is by the improvement executed by the enterprise and energy of the state of Ohio, has, during the past season, increased to a magnitude which was supposed to be attainable only in its full maturity, and has extended to regions which were conceived to lie beyond its utmost limits. The country around these lakes and along the rivers emptying into them, as well as the valley of the Ohio, quite down to the Mississippi, have been supplied through this channel with some portion of their merchandize. Boats are daily seen passing upon it, freighted with goods destined for the territory of Michigan, the states of Ohio, Indiana, Illinois, Kentucky, Tennessee, and even for Missouri and Alabama. The delightful climate of this western region, the great fertility of its soil, and the numerous conveniences it offers for the enjoyments of human life, are daily becoming better known, and attracting towards it an increasing tide of emigration. No human efforts—no conceivable changes of circumstances, can check its rapid settlement, or put far off the time when it will be the abode of a population of many millions, abounding in wealth, and seeking the comforts and luxuries to which commerce must necessarily administer. Its trade will increase with its wealth and its numbers. If our canals are to be what a wise management cannot fail to make them—the principal channel for this trade—we must calculate its extent, and make them adequate to this object. When our system of internal improvements was commenced, a great part of this fertile region was a wilderness, and scarcely a sail was spread, for the purposes of commerce, on the great western lakes. The advancing steps of settlement have but just passed the borders of what was then a wild domain, and it already abounds in products demanding a market, and inviting an exchange for articles from merchandise from the Atlantic states. Lake Erie now appears like a frequent track in the highway of commercial nations. Its waters

are navigated by twenty steamboats, and one hundred and twenty-eight sloops and schooners.

The shipping on this lake has increased in the three last years, from six to eighteen thousand tons. The tonnage entering the port of Buffalo last year, was more than two hundred thousand; and an hundred thousand passengers are estimated to have left it for the west.

We ought not, however, to flatter ourselves that we shall enjoy what we now possess, and what lies before us, without competition. The western trade is a noble prize, for which several of the Atlantic states are contending with a laudable emulation; and they are making powerful efforts to remove the barriers interposed by nature between them and their object. We look on their exertions with no unfriendly feelings; and we trust that they will view, in a like spirit, our efforts to administer to the wants and to subserve the conveniences of the western country.

It has already become quite evident that the capacity of the Erie canal will not much longer be adequate to the exigency of the business on it. The improvements which will soon be required, are double locks to facilitate the passage of boats, and an enlargement of the canal in its width and depth. These improvements must necessarily be made under great disadvantages. The public interests will not allow of an interruption to the navigation; and a considerable part of the labor must therefore be performed in the winter season. This subject will probably be presented to you in a communication from the officers having the charge of the canal, and it will undoubtedly receive from you the attention its great importance demands.

The extent of business on all canals is increased by the facility of transportation, and a reduction of the expenses. By enlarging the capacity of the Erie canal, the cost of transportation will be diminished. The tolls are considerable part of the expense. This subject has occupied the anxious attention of the Canal Board, during the present year; and some of the beneficial results to which I have alluded, particularly the wide diffusion of the trade into the western and southwestern sections of the union, are justly ascribable to the enlightened views of this board, and the judicious modification of the rates of toll. Previous to opening the canals last season, the tolls were reduced twenty-eight and an half per cent. on most of the products of the country, and fourteen and a quarter per cent. on merchandise. Notwithstanding the reduction, the amount of tolls received on the Erie and Champlain canals during the last season, is one million four hundred and sixty-four thousand and fifty-nine dollars and ninety-eight cents, which is two hundred and thirty-four thousand seven hundred and seventy-six dollars and fifty-one cents more than the receipts of the preceding year. This board have it in contemplation to make a further reduction on merchandise, of twenty-five per cent. on the present rates of toll, before the navigation opens in the spring. This reduction will bring the tolls down nearly to the constitutional limit. It is probable they might be reduced on some articles below that point, if it were practicable without lessening the total amount of revenue.

I deem it proper to mention another subject, which has an important connection with the operations of our canal system, but which belongs essentially to the general interests of commerce. The obstructions in the Hudson river, although they affect more immediately the interests of the people of this state, operate injuriously also, upon the commercial interests of the whole country. The federal government exercises a jurisdiction over this river, so far as the regulation of commerce is concerned. It is not only the medium of internal trade among the states, but is extensively used for the purposes of foreign commerce; and the duty of regulating both, is, by the constitution, committed to Congress. Tho' there is a great diversity of opinion as to the limits of the power possessed by the general government, to expend money on works in aid of commerce, and in some cases intrinsic difficulties exist in determining whether a particular object lies within or beyond its scope, yet I believe there are but very few acquainted with the subject, who would contest the right of that government to appropriate money for the purpose of removing obstructions in the Hudson river; and all who admit the right, and are apprised of the extent of the injury arising from the frequent interruption of the navigation, will at once concede that it is the duty of Congress to effect this object; but the appropriation for this purpose has heretofore been defeated, by being united in the same bill with appropriations for other objects, clearly unconstitutional, in the opinion of many members of Congress; and some who were most anxious for this improvement, were driven to the alternative of either voting against the whole bill, or of violating their obligation to support the constitution, by giving their sanction to what they regarded as the illegal exercise of a power, which, if once established, would certainly be used to withdraw from this state, to a great extent, the advantages she has won by her unaided efforts, & by the expenditure of millions derived solely from her own resources. The passage of the bill containing these appropriations would have formed a precedent for resorting to the treasury of the United States, for funds to execute projects having no pretensions to be ranked among those of a public or national character. I venture to affirm that the people of this state, in order to procure one or two hundred thousand dollars, for what is really a national object, will never depart from a sound construction of the constitution, approved by our wisest statesmen, and consent to a dangerous enlargement of the powers of the general government, which would be used to take from them indirectly many millions. They cherish the federal constitution, and more highly prize the common welfare, which can only be permanently maintained by

a proper exercise of the powers delegated to Congress, than any advantages they might obtain by unwarrantably extending these powers to accommodate their local interests, or by giving their sanction to an illegal application of them to favor the local interests of others.

If the appropriation for improving the Hudson river must be encumbered with others for objects not generally considered within the powers of congress, and its success must abide the event of a struggle to establish a theory of construing the constitution adverse to the salutary doctrines contained in the message of the present Executive on the Maysville road, and since virtually sanctioned by the people of the United States, you ought under these circumstances, to consider whether the interest of your constituents does not require that this improvement should be embraced among our public works.

Two modes of overcoming the difficulties in the navigation of this river have been suggested; the one by excavating the alluvial deposits with machines, or removing them by contracting the channel, and thus increasing the current; the other by constructing a lateral ship-canal, commencing below the bars, and extending to the cities above.

Apprehensions are entertained by many acquainted with this subject, that the removal of these deposits, will afford but a temporary relief, and that natural causes will soon torn others. The ship-canal is considered by them as the most certain, as well as the most economical mode of effecting this improvement. This work is of a different character from any that the state has yet executed. Your will therefore feel the necessity of examining carefully the various plans that have been, or may be, suggested, before making any selection, should you decide in favor of the expediency of the undertaking.

Our first public work of internal improvement was commenced in 1817, and in the course of sixteen years we have completed six canals—the Erie, the Champlain, the Oswego, the Cayuga and Seneca, the Chemung and the Crooked Lake. By means of them, water communications are opened from the Hudson river to the Susquehanna on the south, to the lakes in the interior of the State, and to the inland seas on our northern and western frontiers. The aggregate length of these canals, is five hundred and thirty miles and the amount expended in their construction, is more than eleven and a half millions of dollars. From the commencement of the system, it has been steadily carried forward, without interruption, under wise councils and prudent management.

At the last session of the legislature, another canal, of ninety-five miles in length, was ordered to be constructed, which will involve, as recent examinations seem to indicate, a further expenditure of one million five hundred thousand dollars. Though some of these works were not undertaken so early as those sections of the state most immediately interested in them, desired yet I am disposed to believe we have effected more, by a cautious policy, than would have been done by a less considerate course of proceeding. By attempting too much at once, we might not only have done less, but endangered the entire system.

The splendid success generally ascribed to the whole, is in truth, the result of only a part of our works.—The Chemung and Crooked Lake canals have not been in operation a sufficient time to show the extent of their utility; but it is estimated that they will not equal in productiveness the Cayuga and Seneca, or the Oswego canal, which have not yet ceased to be a burden on the public treasure.

The Commissioners of the Canal Fund estimate the charges above the amount of tolls, for the support of the Chemung canal, for the ensuing year, at thirty thousand eight hundred and thirteen dollars and sixteen cents; and of the Crooked Lake canal, at eight thousand five hundred dollars. These sums, if the estimate should prove correct, must be paid out of the treasury of the state.

The revenue of the Oswego and of the Cayuga and Seneca canals, has considerably augmented during the past season, and if a fair allowance were made for the increase of this on the Erie canal in consequence of the additional business resulting from these canals, their income would probably be equal to the expense of repairs and supervision, and the interest on the debt incurred for their construction.

The amount beyond the income of these canals, paid for their support last year from the treasury, was nineteen thousand five hundred and sixty-five dollars and twenty-seven cents; and the estimate of the amount to be paid for the same purpose the ensuing year, is twenty thousand two hundred and fifteen dollars and thirty-six cents.

I do not allude to these circumstances with the view of questioning the policy of these works subordinate to the Erie Canal, but to justify the considerate movements which have characterized our past legislation, and which I hope to see observed in our future measures on this important subject. I desire not to be understood by this remark as entertaining a wish to withdraw your attention from any of the applications which may be made to you for internal improvement; my wish is, to see the system not only continued, but carried forward, in the best way calculated to diffuse its blessings as widely as practicable. We are favored with a country every where presenting capabilities for improvement, and containing industrious and enterprising inhabitants, who are rapidly developing its resources, and anxious to have their own energies aided by

the patronage of the government in removing the obstacles which intercept their easy access to our great markets.

I am aware that applications will be made to you for the construction of several other works, which I deem it unnecessary to specify, because I have not sufficient information in relation to any of them, to enable me to make particular suggestions which would aid your deliberations. My views relative to the character of works which it is expedient to execute at the public expense, were submitted to your immediate predecessors. Upon further consideration of the subject, I see no reasons for modifying them. The proper application of the principles then stated, will, in my judgment, carry us forward in the progress of improvement as rapidly as sound policy dictates, and in due time will extend our system to all the objects which ought to be embraced in it.

If these views should appear to you too restrictive in their operation, and you should deem it expedient to authorize public works, which, for a series of years after they are finished, will impose an annually increasing charge on the treasury for their support, besides entailing on the State a debt for the original expenditure, you will, I presume, consider it your duty to provide the means for the ultimate payment of these burdens at the same time they are created. This provision can, in my judgment, only be made by a general tax, or by a permanent incumbrance upon the revenue of the Erie and Champlain canals. The injury that would result to the State at large, by resorting to either of these modes to raise funds for such a purpose, would, I think, much more than counterbalance the advantages of any public work which will not pay, after the lapse of many years, the interest on the sum expended for its construction, and the expense of repairs and superintendence.

For most, if not for all, of the proposed works, several routes are suggested; and various opinions are entertained as to the proper points for connecting them with the canals already completed, and with our rivers and the lakes. There are strong considerations to induce you, before authorizing the construction of any work, to have the routes minutely and accurately surveyed, and the proposed points of connection carefully examined by skillful and experienced persons, with a view to ascertain the amount of expenditure it will involve, and its utility when completed. The propriety of such a course is evinced by the fact that casual examinations and partial surveys have in all cases led to very erroneous estimates. All the works that have been completed, were authorized under the confident expectation that they would require a much less sum to construct than they have actually cost. The route of the Chenango canal was repeatedly surveyed, for the purpose of ascertaining accurately the expenditure; but after all the pains taken to arrive at a correct result, the estimates were in some instances 50, and in others 75 per cent. below the sum which the surveys recently made, with a view to its actual construction, indicate as its probable cost.

It would be desirable to distribute impartially to all parts of the state the benefits of internal improvements, but this cannot be done; because all parts do not offer equal facilities and equal advantages for public works. Indulging, as I trust you do, a desire to diffuse these benefits to a reasonable extent, you will consider the various plans that may be presented to you, and test them by the application of the general principles of legislation, which ought to direct your proceedings on this important subject. The disposition you may feel bound to make of them, will, I trust, be generally approved.

I have no doubt you will grant, as good policy requires you should, liberal terms and fair privileges to companies or individuals who may be willing to vest their capital in works for the improvement of the state, or for developing any of its resources.

The great design of internal improvements is to afford to the people generally the means of an easy and expeditious intercourse, and to increase facilities for the transportation of their products and articles of merchandise. While we are intent upon devising and executing magnificent works for attaining these objects, let us not lose sight of those of a humbler character, but of very general interest, essentially contributing to the same end. The heavy burdens annually imposed upon the people for common highways and bridges, are not, it is generally believed, attended with corresponding benefits. The mode of applying the labour assessed and the money raised for this purpose, is conceived to be defective. Without increasing the public expense, much better results might be obtained, by securing greater economy in the expenditures, and a more skillful application of the labour to the objects to be accomplished. The general interest of all classes of our citizens in this subject, will commend it to your favorable notice.

We are apprised, through the medium of the public journals, that numerous applications will be made to you for the increase of banking institutions. Notices for one hundred and five new banks, with capitals amounting to about sixty-six millions of dollars, have already been published, and it is probable that additions will be made to this number. These institutions have a vital connection with the business pursuits of our constituents, by reason of their effects on our citizens in their immediate vicinity, and their influence on the currency of the country. Our business transactions have been so long conducted by means of bank credits, and by the use of a paper currency, that this course has become firmly settled, and, if it were desirable, it would be scarcely possible, to change its direction. Banks are now regarded as necessary establishments, but I cannot believe that they are required to the extent now asked for. So far as the business of the country demands an increase of them, you will feel inclined to add to their number.

Banking privileges, not only as they are granted by this State, but as they exist in almost every country, are a monopoly which ought not certainly to be increased beyond the actual exigencies of the public. Private interest in res-

pect to these institutions, unless it accords with the public demand for them, should not, and I dare presume to say, will not be permitted to influence your action on this subject. All legislation which turns aside from the public good, to administer favors to individuals or classes, is partial and mischievous. Every charter granted on the terms heretofore imposed, confers, in the prosperous condition of the State, a donation on the stockholders, of a sum varying from ten to fifteen per cent. on the capital of the company.

Though I do not impute to the applicants, in any instance, selfishness as their leading motive, yet we should overlook a universal law of human conduct, if we did not suppose that self interest influences its influence in their actions, and exerts its sophistry to mislead their judgments, as to the public necessity for institutions from which they have reason to expect a considerable direct pecuniary benefit. If any means could be devised to cause the stock to go into the hands of those to whom it is distributed, worth only its par value, I think there would be much less solicitude for the increase of banks. Whatever value is given to the stock above the sum paid for it, in consequence of the franchise or peculiar privileges granted to the corporation, may, upon any principles of justice, be withheld from the subscribers and rightfully claimed by the state; and it is a cause of regret, that some provision to effect this object had not long since been adopted.

The increasing pressure upon the legislature for the multiplication of banks, and the constantly recurring contests attending the distribution of stocks, are every day demonstrating the propriety of such a measure. I am ready to admit that there are many plausible, and some weighty objections, to appropriating to the state the enhanced value of the stock of an institution chartered by the legislature. The consideration that former applicants have received advantages which are to be denied to others of equal merit, ought not to prevail against any measure for correcting the abuses resulting from the bestowment of these advantages. If such an objection is valid now, it must be equally so at any future period; and the evils must continue, because they have once existed. One of the most effectual modes which has occurred to me, of withholding from the original owners the premium on bank stock, is by a public sale, and reserving to the State the advance above the par value. To this mode of distribution there are several objections. It would facilitate the concentration of stock in the hands of a few wealthy individuals, and thereby lead to a monied influence unfriendly to the free principles of our government. Besides, a bank, in the vicinity of its stockholders, and these not only numerous, but composed of citizens of various pursuits and different sentiments, will be more certain to fulfil the public designs of such an institution, than one owned by a few individuals, residing perhaps at a distance from it, who would feel less disposed to accommodate local customers, and be more strongly tempted to devote it to personal and private purposes.

If the premiums on the sales of stock were either paid into the treasury for general purposes, or assigned to any of the particular funds, this disposition of them, which would be but the mere incident of a measure to correct existing abuses, might be converted into a principal motive for increasing such institutions. The desire of supplying the wants of an exhausted treasury, or of increasing a favorite fund, might possibly operate as an inducement to grant applications which would not be sustained on the ground of public utility. Combinations, by speculators, at the sale, might also prevent fair competition and engross the stock. These objections, to some extent at least, are admitted; but it is believed their force might be much weakened by wise provisions of law regulating the sales, yet whether sufficiently so to render the measure expedient, is a question for your determination.

The reduction of interest on bank loans has been suggested as a measure that would prevent an undue multiplication of banks, by removing private inducements for charters. Judging from the exorbitant profits on most of these institutions, it would appear that the interest on such loans, might be brought down to, and even below, six per cent, and still the investment of capital in bank stock yield ordinary profits. I much fear, however, that this measure is more specious in theory, than it would be sound in practice. There are many things that laws cannot effectually control, and one of them is the interest of money. If the use of money is worth eight or ten per cent, those who have it to loan will general ly contrive, in spite of legislative enactments, to obtain that rate of interest. The reduction of interest on bank loans, below the general rate, would increase, I apprehend, to a alarming extent, one of the evils to be dreaded from these monopolies. Their tendency is to degenerate into exclusive ly private institutions, conducted on the narrow principles of favoritism. If bank interest was one or two per cent. below the common rate, their loans would generally be made to persons interested in the institutions, and so far as the public at large was accommodated, it would be done by a secondary operation, through the agency of those persons, at or above the common rate of interest. The large profits in which all the stock holders now participate, would be partially withdrawn from them, not however to be more generally diffused, but to be concentrated in a narrower circle. The concentration of benefits would be speedily followed by the concentration of the stock; and the few who would by these means get the management of an institution, would be likely to use it for the purpose of private speculation, or to secure to themselves accommodations for their own business on better terms than their competitors would be able to obtain. If such should be the effect of this measure, the inducement of a private character for the multiplication of banks would be increased, and the public benefits intended to be conferred by them, diminished.

The beneficial effects expected from the proposed reduction, would probably be defeated by changing the mode of doing business at the banks. Instead of loaning money on paper, payable at their own counters, they would use their funds to purchase drafts and bills made payable at other places, at such a discount as would be equal, at least, to the general rate of interest. This operation could not be restrained, nor the rate of discount regulated by law, without essentially impairing the public usefulness of these institutions.

A general reduction of interest on all loans and other contracts, would leave banks with at least the comparative advantage they now possess, and the effects of such a measure upon the general prosperity of the state, are worthy of your profoundest consideration. That the accumulation of capital, as distinguished from bank loans and a surcharged circulation of bank paper, is conducive to our general prosperity, cannot be doubted. It is equally obvious that, bringing down the rate of interest, would, to some extent, diminish the total amount of our capital, or at least

check its introduction into the state. Other parts of the Union, where the rate of interest is below ours, think that in this respect we have advantages over them, and they are making efforts to increase it to our percentage. In prosperous times, abundance of capital enables us to expand our business and develop our resources; and in seasons of embarrassment, it helps us to sustain the public pressure.

But if the stock of such new institutions as you may deem it discreet to grant, must be scrambled for by the subscribers, and go into the hands of the successful competitors, worth considerably more than its par value, much of the bitterness of feeling, ordinarily resulting from these contests, would be prevented, and a combination to get control of these institutions, in some measure, defeated, by appointing commissioners for the distribution of stock, in each case, who reside out of the county wherein the bank is to be located, and who shall be not only disqualified from holding any office in it, but from taking, directly or indirectly, any of the stock, for a limited time after it shall go into operation.

These considerations are worthy of your serious attention; but much less so, than the great questions, how far banking capital can be safely augmented, and what further safeguards are required to secure our banking institutions from disasters, in seasons of great commercial revulsion and general embarrassment. In the course of events, such seasons will come, and the increase of banks may be one of the causes that will contribute to their recurrence; and when they do come, it will certainly be the cause of aggravating the severity of the public distress.

Almost the entire business transactions of this State, and of the whole country, are founded on a gigantic system of credit. This system expands, not only with the increase, but by the continuance of our prosperity. Success emboldens the spirit of enterprise, and men gradually forget the lessons of caution and prudence that adversity teaches, as they recede from the times in which they have received this useful instruction. It is your duty, when called on to extend this system by multiplying banks, to consider well what effect this measure will have upon the stability of the whole. If you enlarge the superstructure, you ought to strengthen the foundation.

It is worthy of your consideration, whether an additional safeguard would not be afforded by a general provision, restricting the circulation, not only of the new banks, but, in due time, of those already incorporated, to the amount of their capital. This restriction, seems to me, to be well calculated to add to the public security, without greatly impairing the ability of these institutions to administer to the public wants. Only the specie in the vaults of the banks, remains necessarily in an unproductive state; the residue of the capital may be profitably employed; together with the privilege of a circulation equal to the whole, and the use of the temporary deposits, will enable them to defray their necessary expenses, and render a liberal return to the stockholders for their investments.

I should extremely regret that the considerations which I have urged for cautious action on this subject, should be construed into a warning against particular impending dangers. I am confident there is, at the present time, no existing cause for alarm. Our system of credit, compared with the immense business of the State, embracing, as it does, the transactions of the principal commercial emporium of the great nation, is not extended beyond the systems of the neighboring States, or those of other commercial countries. Besides all the safeguards provided for banks elsewhere, this State has fortified her institutions with additional securities; by creating a fund to protect bill-holders from ultimate loss; by making it the interest of all to detect the mismanagement and contribute to the safety of each;—and by instituting a visitatorial commission to supervise their operations, with ample powers, not merely to correct but to prevent abuses.

The last four years have been to the people of this State a season of unwarmed prosperity. Within this time there has been none of those commercial alterations which ordinarily happen every few years, except a slight pressure at two years since, occasioned mostly by an unfavorable local operation, at this time, resulting principally from the management to which the Bank of the United States has resorted with a view to obtain a renewal of its charter; but the former of these did not, and it is believed, the latter cannot, put to a severe trial the solidity of our banking institutions.

The legislature, within these four years, added nine millions to our banking capital; and you will be urged at this session to add many millions more. It appears to me that it would be hazardous too much to augment this capital to an unprecedented extent, before we have had the experience of less prosperous times to test the effect of the increase already made. While you feel a desire to contribute, in this respect, to the wants of the various sections of the State, you will, I trust, bear in mind that you are acting on a subject of vital importance to all, in its nature both delicate and difficult—because it relates to a system sustained in a great degree by extensive and mutual confidence—and difficult, because it has numerous and complicated relations to the business pursuits of all classes of our constituents.

The constitution is now so amended as to allow the legislature to reduce the duty on salt manufactured in the western part of this state, to six cents on each bushel; this subject will, therefore, properly occupy your attention. The vote on the amendment of the constitution shows clearly that a reduction is generally expected; but a question may arise as to the amount proper to be made at this time. I think there are sufficient reasons for bringing down the duty at once to the minimum rate. Salt is an article of general consumption, and a diminution of its price is a direct benefit to the consumers. The demand for that manufactured in this State is regulated by the extent of the country to which it furnishes a supply, and this extent will be enlarged as the price is reduced. A regard to the public revenue, as well as to the interest of the manufacturers, requires that the region for consumption should be extended as widely as practicable. The material for the manufacture of this article is so abundant, that the supply may be easily equal to the utmost demand.

Of the salt manufactured by our citizens, large quantities are consumed in the Canadas—it supplies the country around the lakes, the western part of Pennsylvania, and a large portion of the State of Ohio, and enters into competition with the salt made at the Kenilworth springs in Virginia, on the borders of Indiana and Illinois. A reduction of six and one half cents on the bushel will be the means of extending the sphere of consumption far beyond these limits, and the increase in the quantity manufactured, for the purpose of satisfying this additional demand, will ultimately compen-

sate the revenue for the increase in the rate of duty. The mutual interest of the manufacturers and the consumers in this State—the advantages to the business intercourse between our citizens and the north and west, resulting directly and indirectly from our ability to supply these regions with this important and necessary article, and the ultimate effect of this increased demand upon the public revenue, considered in reference to the tolls on the canal, as well as to the direct duty on the salt, render it expedient, in my opinion, to bring the reduction to the lowest constitutional limit.

The militia system was cherished by the patriots who laid the foundation of the general and state governments, as essential to the preservation of our liberties. I regret that efforts have been made to bring it into some disrepute. The unfavorable opinions which now prevail on this important subject, do not arise, I am persuaded from a general conviction that all organization of the kind is useless; but they are to be ascribed to the defects of the present system. These defects can be effectually removed only by Congress.

The joint resolutions of both houses of the last legislature suggesting several modifications of the present laws, have been transacted, agreeably to a direction therein, to our senators and representative, in congress, and also to the governors of the several states, with a request that they might be laid before the respective legislatures thereof. It is reasonable to expect that this subject will occupy the attention of congress, and that the present organization will be so far improved, as to remedy its defects without impairing its efficiency.

By the report of the Adjutant General for the present year, the numerical force of the militia of this state appears to be one hundred and eighty-eight thousand, four hundred and forty-seven men.

The particular funds of the state continue in a prosperous condition. The Canal Fund, notwithstanding the reductions of the tolls, has increased in productiveness. The total amount of receipts during the fiscal year ending on the 30th of September, including the tolls on the Oswego and the Cayuga and Seneca canals, and the interest on the surplus moneys belonging to this fund was one million nine hundred and ten thousand eight hundred and ninety-five dollars and sixty-four cents. The total amount of canal debt is 6,3 millions six hundred and seventy-three thousand and six dollars and twenty-nine cents. The debt created for the construction of the Erie and Champlain canals, was, on the 30th of Sept., five million five hundred and twenty-two thousand six hundred and fifty-nine dollars and twenty-nine cents. To this debt the constitutional pledge of the tolls at a specified rate, and of the auction and salt duties, attaches. During the last year, the commissioners expended one million five hundred and sixty-six thousand three hundred and ten dollars and three cents, in purchasing the stock of this debt. In consequence of the period of redemption being in 1837 and 1845, they were obliged to make purchases at a premium. After making these purchases, they had in treasury on loan, and invested in other stocks, amounting to two millions six hundred and two thousand five hundred and ninety-four dollars and seventy-six cents, belonging to this fund. The actual amount of the debt to which the constitutional pledge is applicable, beyond the means the commissioners possess for redeeming it, is therefore only two millions nine hundred and twenty thousand and sixty-four dollars and fifty-three cents.

If large expenditures are not made for enlarging and improving the Erie and Champlain canals, the commissioners will probably have, before the end of three years, sufficient means for discharging the whole of this debt; yet the pledge must continue, unless all the stock be purchased, until July, 1845. The object of the pledge was to obtain the means of reimbursing the loans made for the construction of these works. When funds are accumulated amply sufficient for this end, there can be no good reason for retaining the pledge. Its continuance beyond that period, will be attended with embarrassments and positive injury. It will prevent such a modification of the tolls, as would best subserve the interests of trade, or as would produce the best result as to revenue. It is intended, as the course of your predecessors for a few years past seems to have indicated, that the canals shall return to the general treasury of the state, some part or the whole of the moneys that have been taken from it for their benefit. It would seem proper to have that matter adjusted as soon as practicable. Should it be judged expedient to make the revenues of the canals subsidiary to the support of the constitution, of other public works of internal improvement—even for this purpose, it would be convenient to have them disencumbered at an early period.—After considering this subject in all its bearings, you will determine whether the interest of the State requires that this pledge should be removed, when sufficient means for paying the loans secured by it, shall have been obtained.—As such a measure will require an amendment of the constitution, which cannot be effected in a shorter period than two years, you are invited to consider it at the present session.

The productive capital of the School Fund is one million seven hundred and fifty-four thousand sixty-six dollars and eighty-four cents, and has increased eleven thousand eight hundred and seventy-one dollars and fifty-six cents, the last year. Its income was, during that year, one hundred and nine thousand one hundred and seventeen dollars and seventy-seven cents.

The capital of the Literature Fund is two hundred fifty-seven thousand nine hundred thirteen dollars and forty-six cents, and it produced an income last year, of twenty two thousand five hundred and seventy seven dollars and twenty-two cents.

I presented to your immediate predecessors the condition of the General Fund, and urged on them the necessity of devising the means of replenishing it. Such a measure seemed to me necessary to enable that fund, not only to defray the ordinary expenses of the government, which amount annually to about three hundred thousand dollars, but to pay such appropriations as it might be deemed expedient to make, for establishing or supporting institutions for objects worthy of public patronage. That duty was deferred, and it now devolves on you. I take the liberty to refer you to my annual message to the legislature last year, for my views on this subject, and to recommend to you to devise and settle a system of finance for the support of the government.

Having discharged the duty imposed on me by the constitution, of communicating to you the condition of the State, and recommending such matters as in my judgment ought to engage your attention, permit me in conclusion to assure you that I shall most cordially co-operate with you in all measures for the common good of our constituents, or for the interest of any portion of them, so far as it is compatible with the welfare of all.

W. L. MARCY.
Albany, Jan. 7, 1834.

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m 18

**INSTRUMENTS.****SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.**

EWING & HEARTT, at the sign of the Quadrant, No. 43 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude.

For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewing & Hartt.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable. They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES F. STABLER,

Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' Instruments of your Manufacture, particularly Spirit Levels, and Surveyor's Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

WILLIAM HOWARD, U. S. Civil Engineer.

Baltimore, May 1st, 1833.

To Messrs Ewing & Hartt.—As you have asked me to give my opinion of the merits of those Instruments of your Manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming acquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprise so well merits, I remain, yours, &c.

B. H. LATROBE,

Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them upon application, to any persons desirous of perusing the same.
m 18



SUPERIOR VEGETABLE AND AGRICULTURAL SEEDS, &c.—The subscribers having devoted a portion of their grounds to testing the excellence of the various Vegetables of foreign climates and also the most select of our own country, now offer to supply vend read others with a most extensive assortment of the finest Esculent Vegetable Seeds: also with Agricultural Seeds, and with those of above 40 varieties of annual and perennial Flowers. The Seeds now offered possess the advantage of being reared under their own direction; or, when imported, of being tested to our satisfaction, and their accuracy and vitality are expressly guaranteed; and among them will be found a large number of highly estimable kinds never before offered to the public. Catalogues will be forwarded to every applicant, and orders sent by mail will meet with the utmost dispatch.

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LOCOMOTIVE ENGINES.

THE AMERICAN STEAM CARRIAGE COMPANY, OF PHILADELPHIA, respectfully inform the public, and especially Railroad and Transportation Companies, that they have become sole proprietors of certain improvements in the construction of Locomotive Engines, and other railway carriages, secured to Col. Stephen H. Long, of the United States Engineers, by letters patent from the United States, and that they are prepared to execute any orders for the construction of Locomotive Engines, Tenders, &c. with which they may be favored, and pledge themselves to a punctual compliance with any engagements they may make in reference to this line of business.

They have already in their possession the requisite apparatus for the construction of three classes of engines, viz. engines weighing four, five, and six tons.

The engines made by them will be warranted to travel at the following rates of speed; viz. a six ton engine at a speed of 15 miles per hour; a five ton engine at a speed of 18 miles per hour; a four ton engine at a speed of 22 1/2 miles per hour. Their performance in other respects will be warranted to equal that of the best English engines of the same class, with respect not only to their efficiency in the conveyance of burthens, but to their durability, and the cheapness and facility of their repairs.

The engines will be adapted to the use of anthracite coal, pine wood, coke, or any other fuel hitherto used in locomotive engines.

The terms shall be quite as favorable, and even more moderate, than those on which engines of the same class can be procured from abroad.

All orders for engines, &c. and other communications in reference to the subject, will be addressed to the subscriber, in the city of Philadelphia, and shall receive prompt attention.

By order of the Company,

WILLIAM NORRIS, Secretary.

December 2d, 1833.

For further information on this subject see No. 40, page 73 of this Journal.

SURVEYORS' INSTRUMENTS.

Compasses of various sizes and of superior quality, warranted.

Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by
E. & G. W. BLUNT, 154 Water street,
J 31 & corner of Maidenlane.

ENGINEERING AND SURVEYING INSTRUMENTS.

The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely new: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy; also, a Railroad Goniometer, with two Telescopes; and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.

WM. J. YOUNG,
Mathematical Instrument Maker, No. 9 Dock street,
Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.

Baltimore, 1832.

In reply to thy inquiries respecting the Instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad. I cheerfully furnish thee with the following information: The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all Instruments of the kind are liable.

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rail on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sight, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to later angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,

JAMES F. STABLER, Superintendent of Construction of Baltimore and Ohio Railroad.

Philadelphia, February, 1833.

Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors.

E. M. GILL, Civil Engineer.

German town, February, 1833.

For a year past I have used Instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these Instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY R. CAMPBELL, Eng. Philad.,
Common and Norristown Railroad.

GRACIE, PRIME & CO. having this day taken into co-partnership JOHN CLARKSON JAY, will continue their business under the same firm.—New-York, 1st October, 1833.

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ATLANTIC JOURNAL AND FRIEND OF KNOWLEDGE—A Quarterly Journal, by Professor Rafinesque, of Philadelphia, begun in the spring of 1832, with wood cuts, &c. dedicated to Historical and Natural Sciences, Botany, Agriculture, &c. at one dollar per annum.

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AMERICAN FLORIST, with 36 figures—price 36 cts.

* * Orders for these works, or any other of Professor Rafinesque's, received at this office.

A 91 J M & F

TOWNSEND & DUFFEE, of Palmyra, Manufacturers of Railroad Rope, having removed their establishment to Hudson, under the name of Duffee, May & Co. offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J. B. Jervis, Eng. M. & H. R. Co., Albany; or James Archibald, Engineer Hudson and Delaware Canal and Railroad Company, Carbondale, Luzerne county, Pennsylvania.

Hudson, Columbia county, New-York, {
January 29, 1833. F 14

INCOMBUSTIBLE ARCHITECTURE.

INCOMBUSTIBLE dwelling-houses and buildings of all kinds devised or built in New-York, or any part of the United States, as cheap as any other combustible buildings. Actual buildings and houses rendered Incombustible at a small additional expense.

SHIPS of all sorts, and Steamboats, rendered Incombustible, and not liable to sink, at a small expense.

For sale, 10,000 lbs. of ANTIIGNIS, or Incombustible Varnish, at one dollar per lb.

Apply to C. S. RAFINESQUE, Professor of Hist. and Nat. Sciences, Chemist, Architect, &c. in Philadelphia, No. 60 North 5th street. A pamphlet given gratis.

References in New-York.—Mr. Minor, Editor of the Mechanics' Magazine; Messrs. Rushton & Aspinwall, Druggists. Editors in the city or country, copying this advertisement, will receive a commission on any contract procured by their means.

81 R J M & F

NOTICE TO MANUFACTURERS.

SIMON FAIRMAN, of the village of Lansingburgh, in the county of Rensselaer, and state of New-York, has invented and put in operation a Machine for making Wrought Nails with square points. This machine will make about sixty 6d nails, and about forty 10d nails in a minute, and in the same proportion larger sizes, even to spikes for ships. The nail is hammered and comes from the machine completely heated to redness, that its capacity for being clenched is good and sure. One horse power is sufficient to drive one machine, and may easily be applied where such power for driving machinery is in operation. Said Fairman will make, vend and warrant machines as above, to any persons who may apply for them as soon as they may be made, and on the most reasonable terms. He also desires to sell one half of his patent right for the use of said machines throughout the United States. Any person desiring further information, or to purchase, will please to call at the machine shop of Mr. John Humphrey, in the village of Lansingburgh.—August 18, 1833. A 90 tr RM & F

TO RAILROAD COMPANIES.

PROFESSOR RAFINESQUE, of Philadelphia, will undertake to build CARS that will carry along their own railway, and may be used on level M^d Adam roads. They will save ten millions of money to be wasted on 1000 miles of iron railroads to be laid in the United States within a few years, and dispense with tracks and double tracks. These Cars may be drawn by horses or steam. He claims to have discovered them ever since 1820, by his savants filed in the Patent Office. Apply, post paid.

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TO STEAMBOAT COMPANIES.

PROFESSOR RAFINESQUE, of Philadelphia, offers his services to render steamboats incombustible and not liable to sink, even by the bursting of boilers, or striking against snags, sawyers and rocks. This will save many boats, much property, and the lives of hundreds every year. Those who neglect this easy improvement, deserve to be neglected and deserted by the public as un mindful of safety. Apply, post paid.

81 R J M & F

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The subscriber having resumed the charge of the above establishment, is now enabled to furnish traders and others with FRESH GARDEN SEEDS, upon very favorable terms, and of the growth of 1833, warranted of the best quality.

The greatest care and attention has been bestowed upon the growing and sowing of Seeds, and none will be sold at this establishment excepting those raised expressly for it, and by experienced seedsmen; and those kinds imported which cannot be raised to perfection in this country; these are from the best houses in Europe, and may be relied upon as genuine.

It is earnestly requested whenever there are any failures hereafter, they should be represented to the subscriber; not that it is possible to obviate unfavorable seasons and circumstances, but that satisfaction may be rendered and perfection approximated.

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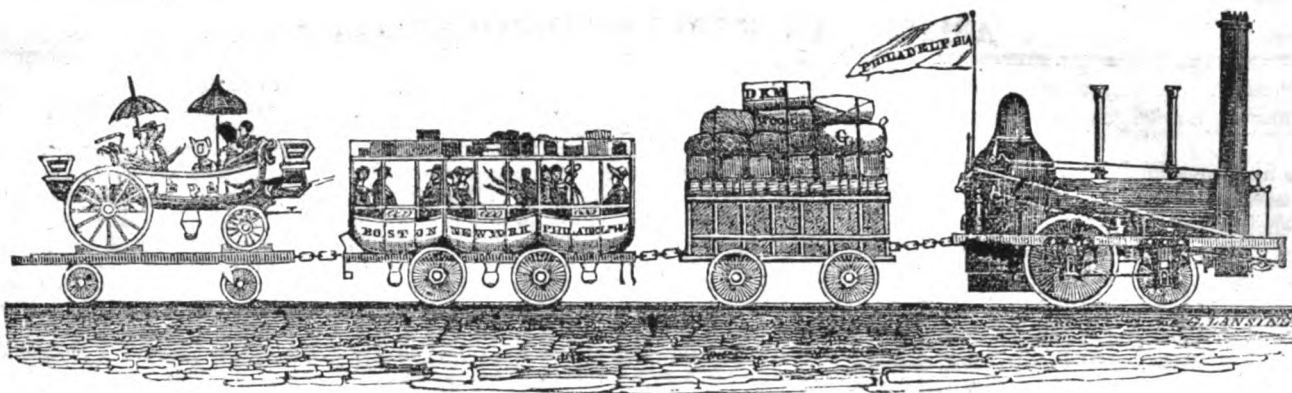
347 N. Market st. (opposite Post Office.)

Catalogues may be had at the Store; if sent for by mail, will be forwarded gratis. Orders solicited early, as the better justice can be done in the execution.

* * Mr. Thorburn is also Agent for the following publications, to wit:—

NEW YORK FARMER and American Gardeners' Magazine. MECHANICS' MAGAZINE and Register of Inventions & Improvements.

AMERICAN RAILROAD JOURNAL and Advocate of Internal Improvements; and the
NEW-YORK AMERICAN, Daily, Tri-Weekly, and Semi-Weekly; either or all of which may be seen and obtained by those who wish them, by calling at 347 North Market street, Albany.



AMERICAN RAILROAD JOURNAL, AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT No. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, EDITOR.]

SATURDAY, JANUARY 18, 1834.

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, JANUARY 18, 1834.

PORTSMOUTH AND ROANOKE RAILROAD.—The Editor acknowledges his obligation to R. H. Bradford, Esq., of Washington City, for a paper containing a report of the chief engineer of this railroad, a part of which will be found at page 24, and the remainder will be given in a future number of the Journal. The prospects of this road may, we think, be considered very fair; the more so at this moment, on account of the disposition exhibited in the Virginia Legislature, by the passage in the House of Delegates of a bill authorizing a subscription by the State for two-fifths of the stock of the company. The completion of the Roanoke and Portsmouth railroad will be of immense benefit to the whole Roanoke country, as well as to the ancient city of Norfolk. Lands which have for years been of no value, or of so little value as to remain uncultivated, will be again brought into use. The construction of railroads, intersecting the various parts of Virginia and North Carolina, will have a tendency to check emigration, and of course to re-establish a different and more gratifying state of things in those States.

In acknowledging our indebtedness to the numerous friends of the Journal for past favors, to which it is mainly indebted for its present standing, the Editor cannot refrain from soliciting, and even urging, a continuance of the same kind feeling which has enabled him thus far to contribute to the extension of information calculated in a high degree to promote the prosperity of the country. With a continuance of their aid, and an increased exertion on his part, he hopes to be able to diffuse, more widely

than heretofore, such information as will promote the convenience and happiness of the mass of his countrymen.

ITHACA AND OWEGO RAILROAD.—In a recent excursion westward, we had an opportunity of passing over and examining a part of this road. From a previous hasty perusal of the report of its able engineer, we were led to entertain a favorable opinion of the mode of construction adopted by him—and a personal examination, we are much gratified to say, enables us to speak in high terms of that part from the foot of the inclined plane to its termination at the inlet, which is now completed. The curve of this part of the road is upon a radius of 2,434 feet, which may be considered an easy one for the use of locomotive power. The ascent from the wharf to the foot of the inclined plane, a distance of 5,366 feet, is at the rate of $7\frac{3}{16}$ ft per mile. The rails are laid along and parallel to the inlet, at a distance sufficient to allow of a range of large storehouses between it and the water, so that goods may be taken in from the cars at one end, and from boats at the other. In forming the embankment for this part of the road, a channel for the stream or canal has been dug, which confines its waters within certain bounds, therefore does away, or remedies, a serious inconvenience, under which the place has sometimes labored, in consequence of its overflowing its banks. It will also, with a small additional expense, enable boats to come quite up into the village.

That part of the road, however, between the inlet and the foot of the inclined plane, loses, comparatively, its interest when you approach and ascend the inclined plane. This plane, probably, attains a greater elevation in the same distance, than any other in the world. It rises 1 in $4\frac{3}{16}$, or 405 feet in 1,733. It commences a short distance from the base of the hill with a high embankment, but soon finds a resting on a firmer basis—the solid rock—a considerable excavation of which is carried near to the summit, and upon which rails of the most permanent kind, being of white oak, 12 inches square, secured in the best manner to the rock beneath, are laid. At a distance of 1733 feet, and an elevation of 405, from the base of

the plane, stands the engine-house for stationary power, into the second story of which the plane is carried, in order to attain, in the shortest possible distance, the greatest practicable elevation; directly at the south end of this building, and at an elevation of over 20 feet, the railroad crosses the Owego turnpike, and continues gradually to ascend for about seven miles, to the summit level; after which, it descends gradually to the Susquehannah, at Owego. At first view, it will probably appear that so bold an ascent is injudicious—yet, on reflection, it will be conceded, we think, that, with a powerful stationary engine, and a plane of uniform grade, the ascent of 404 feet may as well be overcome in five as in ten thousand feet.

The second inclined plane commences a short distance from the head of the first, but its ascent is only as 1 in 21, or 106 in 2,225 feet: thus overcoming, in the distance of 3,959.3 feet, an elevation of 511 feet. The greatest part of it, however, or 405 feet elevation, is attained within the space of 1,733—which is probably a greater elevation than is attained on any other Railroad within the same distance.

Doubts are entertained by some of the policy of the measure, as they apprehend danger in descending. There will be danger, undoubtedly, unless the machinery is appropriate to the occasion; but with such machinery,—and we were informed that Mr. Randall had also invented a safety-apparatus, which will prevent damage, even if the rope were to break,—we entertain no doubts of the complete success of the plane. It will be a curiosity in the history of Railroads.

With a water communication on one side, and a railroad on the other, which will ere long be continued to this city, Ithaca, with her immense water power, which is said to be equal to the power of 30,000 horses, must become not only one of the most flourishing, but also one of the greatest manufacturing towns in the state.

The extreme cold weather, and other engagements, prevented an examination of the line; but we were informed that a section of about 13 miles is to be completed and in use early in the spring. It will not long continue, we trust, an isolated road, but soon be continued, or rather connected, with one which will extend from the Hudson to Lake Erie.

Mr. Burden's New Steamboat. By G. [Communicated for the American Railroad Journal.]

It is interesting to observe, as we sometimes may, how nearly the extremes of the perfection of science, and the early rude essays of art, approximate each other; how often, when the efforts of genius, after long and painful study and experiment, have produced a work which excites wonder and admiration. We may find among some of the earliest and rudest specimens of savage or untutored art, an example of the successful application of the principle by men whose minds were never admitted even to the vestibule of the science, and which has existed in the view of half the world for ages, without ever having been known to arrest the eye of science with reference to the particular principle sought for.

I was led to this remark by the notice I have seen in the Journal, of Mr. Burden's new invented steamboat, the principle of which seems to be so far in advance of all others heretofore known, that perhaps we might conclude that attempts so further improvements would be vain. It is indeed, so far as I can judge from the descriptions I have yet seen, a highly important improvement, and Mr. Burden deserves much credit for his sagacity, enterprise, and perseverance. And the remark with which this article is introduced was far from being designed to detract from the merits of the invention, or the credit of the inventor. It was intended rather to excite attention to the fact, that a careful observation of many of the earliest essays of art may be useful in any endeavors still further to improve this important department of naval architecture, as well in assisting the researches of science on other subjects.

Of the various elements which enter into the composition of the most perfect specimens of naval architecture, some are, in a degree, incompatible with others. Thus, of the respective forms of construction best adapted for speed, burthen, safety, strength, or power of control, severally, no one can be exclusively given, in its utmost extent, without destroying or essentially impairing the usefulness of the vessel in respect to some other requisite properties.

Since the introduction and extension of railway conveyance has appeared to threaten almost to supersede the use of canals, particularly in cases where speed of transportation was an essential object, the attention of a portion of the community has been directed to the question, whether the supposed limit to the speed of canal boats, occasioned by the accumulated resistance of the water in proportion to the increased velocity of the boat, might not be overcome. The laws of matter and motion, however, were confidently supposed to preclude the possibility of success, to any degree which should approach to the velocity already attained on railways, (unless perhaps at an expense of motive power greater than would be justifiable in practice.) But experiments were instituted in Great Britain, which soon determined that a speed of at least 15 miles per hour was attainable by a canal boat, with the power of a single horse. (I refer here to experiments on the Ardrossan, and on the Forth and Clyde canals, in 1830.) Later experiments may have produced still higher results, but I do not recollect to have seen any accounts of such. Mr. Burden's experiment, however, seems, so far as we can judge at present, to establish the fact that, by the power of steam, any desirable degree of velocity may be obtain-

ed on smooth water, as easily as on land. The disparity, therefore, between railway and canal transportations, so far as velocity is concerned, appears by this to be immensely diminished, if not perhaps annihilated; and modern science will glory over ignorant antiquity, in the discovery that the resisting power of water is no longer an insuperable impediment to the swiftness of conveyance over its surface.

But, let us pause. Making certain degrees of allowance for the facility rendered by the more or less gradual and smooth outline of the curves forming the stem and stern of the boat, the power necessary to propel a vessel through the water is not so much proportioned to the absolute weight of the boat, or the quantity of water it displaces, as to the superficial measure of the greatest transverse section of that part of the boat which is immersed in the water. This principle has long been applied to practice in the construction of boats used to ascend our rapid rivers with heavy loads. These have been made as narrow as they would bear without upsetting, or becoming too unsteady for safety; and as long as they would bear without breaking, when they happened to be aground; perfectly straight on the floor, with as long a rake, fore and aft, as was consistent with convenient management. They were so constructed from the observation of facts, obvious to the eye of the practical boatman, without reference to recondite principles of physical science, because they knew no more of those principles than their effect on the subject matter of their daily occupations. Yet they gained one of the points long sought by science. They transported their loads, ascending against the smooth rapid currents of our rivers, with the least possible expenditure of muscular power, which was the only power then employed; and this point was all they sought. But there were other points not attained in this simple construction. The long flat bottom, and strait "wall sides," were well adapted to easy motion in a direct line forward, in perfectly smooth water, but to move in a curve line was not so easy, and to double a short point, or follow the sinuosities of some of the rivers and streams, without constantly chafing against the banks, would require more power to be exerted laterally, than would be requisite for the direct propulsion of the boat in the strongest current. To navigate, also, in rough water, the long low-sided boat was unfit. The short waves, not sufficiently broad and gradual to bear up the whole boat, were yet sufficiently high to break over its sides, and fill and sink it.

Mr. Burden's improvement remedies both these disadvantages. The curves of the bottom, as well as the sides of his boat, facilitate the steering, and place it under the control of the helm. His tight deck, (for so that part of his boat which lies out of the water may be termed,) prevents the filling and sinking of the boat in rough water; though, perhaps, something of its speed in a direct line and smooth water may be sacrificed by the greater transverse section of the bilge. But in a minor consideration, compared with its other advantages. The great length, compared with its small transverse section, gives the advantage of increasing the tonnage without increasing the direct resistance to its speed; and the arched form of the whole gives it all the strength which is consistent with other indispensable properties.

But, the example of the river-boats, which I have cited, is not the only instance of the successful application in practice of principles unknown in theory (unless the practical observations of the untutored savage may be said to be scientific theory in another form). I have, many years ago, with emotions of surprise and pleasure, watched the rapid gliding of the long, slender, curvilinear forms of the cedar canoes of the Indians navigating the waters of the Oronoke—the apparent ease with which they propelled them with their light paddles—the velocity of their direct movements, and the graceful ease of their steering. With similar feelings I have seen

and navigated the light birch bark canoe of the Indians of the Penobscot. Their speed—ease of propulsion—facility of evolutions—safety, in skilful, yet, fragility and danger in unskilful, hands—have long been a theme of admiration to those to whom familiarity has not rendered the sight indifferent. These, with those of the Oronoke, and other parts of the south, and, as far as I can judge from the descriptions I have seen, the astonishingly swift pirogues of the South Sea Islanders, are all actually formed at and below their water-line, substantially on the principle of Mr. Burden's parabolic spindle! The savage fashions his rude back in the form which the experience of his forefathers has taught him was best adapted to obtain the ends desired—speed, safety, and ease of evolution, so far as circumstances would admit of their combination. But one thing more was wanting. The least possible width to the boat was necessary to diminish the resistance of the water to its rapid flight; but this rendered it too liable to be upset. To remedy this, the "outrigger," and the "double-canoe" of the South Seas, appear. These perhaps may have afforded the hint for the "twin boat," introduced but few years ago on the Forth and Clyde canal—and now to the latter succeeds, on the same radical principle, the "twin parabolic spindle raft" (if I may be allowed to coin the appellation) of Mr. Burden.

It is yet to be ascertained whether Mr. Burden's boat will prove as valuable an improvement in navigating the ocean, as it appears to be in the mode of river and canal navigation. Its "tight deck" gives it, in some respects, the advantage over its partial prototype, the Indian canoe; but, for some purposes, the form of the latter may be preferred. It may, also, at present be doubted, whether the extreme length of the projecting part of the "spindle," level with the surface of the water, may not, in ocean navigation, expose it so much to the power of the waves, as to impede its motion and endanger its safety, more than sufficient to counterbalance its other advantages. But this is only the precautionary suggestion of ignorance; and I would not, by any means, utter it to damp the ardor of inventive improvement, or diminish the credit due to the experiment thus far. Mr. Burden will doubtless be stimulated by his present success, to study still farther improvements; and will not, I am sure, impute the observations I have made to any unfriendly spirit. They are made on the spur of the moment, under the influence of real pleasure at the announcement I have just seen of his experiment, and a disposition to contribute my mite towards bringing to view any such facts in the history of the arts as may afford any lessons or hints useful to the cause of general improvement. The facts I have alluded to prove, at least, that one part of Mr. Burden's principle—the form of his boat below the water-line—is a sound one—that it has stood the test of long experiment. With respect to the other part—the unity of the whole to prevent the dangers, in rough water, of almost constant submersion—perhaps the "kajak" of the Greenlanders may afford an analogy of some importance. So that, on the whole, should Mr. Burden's first experiment fail, or come short of complete success, he will have the support of long-tried facts to sustain him in asserting the soundness of the principles; and need only to direct his attention to such improvements as may be necessary in the details, to make his invention complete in all respects. Every American—indeed, every friend to the success of rightly-directed enterprise and the improvement of the condition of man—must cordially wish him success.

G.

STEAMBOAT NEW ENGLAND.—We are induced to insert the annexed testimony of the witnesses examined respecting the bursting of the boilers of the New England, notwithstanding its length, on account of the importance of the general subject to which it relates, the

melancholy interest connected with the case immediately under consideration, and the high scientific reputation of the gentlemen composing the Board of Examiners. Public opinion had assigned a *deficiency of water* as the cause of the explosion; but the Committee, after the most careful investigation, are unanimous in the belief that it was "the pressure of steam produced in the ordinary way, but accumulated to a degree of tension which the boilers were unable to sustain."

Alexander Marshall, Engineer.—Was engineer of the Steamboat New England, on the 8th October last. Left New-York a few minutes after 4, P. M., on that day, with a light pressure of steam. The engine having been started cold, the steam did not increase till we had proceeded as far as Hurlgate.

The average pressure used on the passage was from 10 to 12 inches. The steam rose after starting from 8 to 14 or 16 inches. At 7, P. M., left the engine in charge of Mr. Younger, the assistant engineer, and retired to rest with a view of taking his watch at 10 P. M. Was called by Mr. Younger at 10 o'clock. There was a heavy sea in the sound, and, in consequence of orders which Capt. Waterman had given, the steam was reduced to 8 or 9 inches. Was obliged to stop before arriving in the river by order of the pilot, in order to adjust the wheelrope. Arrived in the river about 1 o'clock A. M. Missed the wharf at Saybrook, and after a second attempt to gain the wharf, some difficulty occurred with the lifting valves, in consequence of the binders by which they are confined being screwed too tight, which made it necessary to anchor. After loosening the valve rods, the boat got under way, and landed at Saybrook. Landed also at Lyme. Just before landing at Essex, went into fire-room and examined the gauge-cocks (water-cocks,) and found the water good in the boilers. This was three or four minutes previous to the explosion. The boat was stopped about two minutes at Essex to land a passenger, with the small boat. Took hold of the pulley of the safety valve for the purpose of raising it, and at this moment the explosion took place. Does not know whether he had lifted the valve or not.

Being further examined, he says, that the steam-gauge did not exceed 14 inches while in the Sound nor 10 inches after entering the river. This statement is not founded on actual measurement. There was no scale of inches marked to either of the steam gauges. Refers only to the height of his own gauge in the engine room. Is aware that the steam-gauges in the two fire-rooms ranged considerably higher. Ascribes the difference to the greater expansion of the mercury in the fire-rooms, from the proximity to the fire. Had a greater pressure of steam immediately previous to the explosion than was proper to use in the river, where the boat does not steer well under a strong power, and this was the reason why witness attempted to raise the safety valve.

Witness further says, that the New England commenced her first trip on the 30th August last, under the charge of witness as engineer, he having been employed to set up the engine. The charge of the engine was afterwards given to Mr. Potter, the engineer of the company who owned the boat.

Witness again took charge of the engine on the trip previous to that on which the accident occurred, in consequence of the illness of Mr. Potter. Witness was employed as engineer of a steamboat at the South, 12 years ago, which boat was run by him during the season of navigation. Says that his management on the night of the accident was not at any time influenced by a desire to shorten the passage. Heard no inquiry made by any of the passengers about racing. The only fuel used by him in the New England was pine wood. Witness has been

20 years engaged in his present business. Has served a regular apprenticeship in the manufacture of engines. Has been employed in New-York by Mr. McQueen, Mr. Allaire, Mr. Sabbatton, and the West Point Foundry Association.

The safety valve of the New England was loaded 18 pounds in the square inch, and its position on the steam pipe is 20 feet, or more, from the boilers. Besides two regular weights on the safety valve, there were two extra weights, a 50, and a 23. The valve will blow off at 8 pounds to the square inch, with the two regular weights. This is owing to the lever of the safety valve having been shortened about 2 feet, to bring it within the walls of the room by which it is enclosed. The diameter of the safety valve is 10½ inches. The diameter of the steam pipes which lead from the boiler is about 10 inches.

Robert Younger, Assistant Engineer.—Witness started from New-York at a few minutes past 4 o'clock, P. M., as assistant to Marshall. At 7, P. M., Marshall left the engine in charge of witness. About half past 8, Capt. Waterman came to the engine-room and asked if the engine did not labor too much in the sea. Also inquired the height of the steam-gauge; was answered 10 inches. Capt. Waterman requested him not to carry any more. Witness then blew off steam, and went to the fire-room and gave directions for less fire. Run with steam from 8 to 10 inches, till Mr. Marshall came on deck at 10 o'clock. Witness examined the water in the boilers frequently on the passage. Did not see the height of the steam-gauge for the last 10 or 15 minutes previous to the explosion, because his view of the gauge while standing at his post in the engine-room was obstructed by an appendage to the steam-pipe. There was no difficulty occurred in the management of the water in the boilers. One of the boilers foamed once while Mr. Marshall was below. This was immediately stopped by putting oil into the force pump. The steam was blown off at Saybrook while lying to for the purpose of loosening the binders of the lifting rods. This was before landing at Saybrook Point. The position of the bulk-head did not prevent the raising of the safety valve. Witness saw the moveable part of the bulk-head in its proper place on the morning after the accident. Is certain of this from his own personal examination. Has never witnessed an accident of this kind before. Has been 12 years engaged in the business of making engines. Made his first trip as an acting engineer in the New England when the boat was first started. Assisted Marshall in fitting up the engine. Thinks that there was no want of water above the flues, but is of opinion that the steam had blown the water from the legs of the boilers.

William Vail, Pilot.—Says that the New England left New-York at 12 minutes past 4 P. M. in company with the steamboat General Jackson. The steamboat Boston left the wharf soon after the New England. The Boston gained upon the New England till they reached Hurlgate. The New-England then got more steam on, and drew away from the Boston. Found a heavy sea in the Sound, after passing Sand's Point, and the Boston then preserved her distance. The New England steers very badly. After passing Falkner's Island, the wheelrope got foul, and detained us a few minutes, and the boat fell into the trough of the sea. Off Killingworth, and again off Duck Island, the same detention occurred. When off Cornfield Point, (Saybrook,) witness told the engineer that the boat would not steer in the dark with such a heavy sea, and told him not to carry over seven inches, and repeated the same direction to the engineer when in the river. When crossing the bar at the mouth of Connecticut river, the boat steered very bad, and was obliged to ring the bell to shut off the steam. Missed the dock twice at Saybrook, in consequence of no person being on the dock

to take a line. Backed down to near the Fort, where, owing to some difficulty with the valves, the boat could not be started ahead, and was obliged to anchor to prevent drifting on shore. Went into the engine-room and waited twenty minutes for the engineer to get ready for a start. Looked into the fire-room and asked if the water was plenty in the boilers, and was answered 'yes.' Got up the anchor and landed at Saybrook. Started again from Saybrook, and was obliged again to order the steam shut off, because it was difficult to steer the boat. Landed at Lyme, and on starting again, found that the boat jumped so with a head of steam, and steered so badly, that it was necessary to shut off the steam again, and continued shut off till we reached Essex, seven miles from Saybrook. Was detained three or four minutes in landing at Essex. When the small boat had landed, Capt. Waterman gave the word, and witness rung the bell to start the engine, and the explosion immediately followed.

The steam was not blown off at Essex. Witness thought at the time that there was too much steam on. Heard but one explosion, which was like a heavy fall or crash. Had been pilot of the New England for 30 days, which was nearly as long as the boat had run. The accident occurred an instant after ringing the bell to go ahead. Witness had felt apprehensions for his personal safety, on account of the pressure of steam which was carried; judged of this by the motion of the engine and the management of the boat. Saw at Saybrook, the steam-gauge standing at 12 or 14 inches, and cautioned the fireman against carrying too much steam. The stop at Essex was no longer than 3 or 4 minutes.

The greatest distance gained of the Boston was about two miles and a half, which was near the head of the Sound. The Boston was nearly abreast when we entered the river. Witness is unable to make up his mind as to the cause of the accident, but thinks that the rent commenced in the legs of the boiler near the after end.

Giles Farnham, Fireman.—This witness was on duty at the larboard boiler. Took the first watch from New-York, and went below at 8 o'clock. Took his second watch after 12 o'clock, just before the boat entered the river. There were but 8 or 10 inches steam on the boiler before the boat arrived at Saybrook. The steam-gauge rose to 12 or 13 inches while lying at anchor at that place. Blew off the steam to 7 inches, and pumped water by hand into the larboard boiler. Witness says the water was lower in the boiler at this time than at any other, being at the 2d cock. The other boiler needed no supply. Witness examined the water every five minutes. Started from Saybrook with water at three cocks, and kept it afterwards at four cocks till the time of the accident. Above Lyme there was more steam on than there ought to be for the river. The floating stick in the steam-gauge in the larboard furnace was within two inches of the upper or boiler deck, when the boat stopped at Essex, and witness supposes it must have reached the deck previous to the accident.

While the boat was stopped at Essex, tried the water-cocks, and found the water as high as the upper cock. The witness then went over to the starboard fire-room, and told Bell, the other fireman on duty, that "he would not have to fire up again for a week if they went on so." Had but a moderate fire at this time in the furnace. Says, the extra pressure was owing to the engine being shut off so much. At the moment of the explosion witness was sitting on the rail of the fire-room gangway, at the outside of the guard, conversing with Bell, the other fireman. Witness heard a sudden cracking of the boiler, and attempted to look round to see what was the matter, which was the last he knew till he found himself in the water. Was severely scalded, but succeeded in swimming to the shore. Witness says that when there was no steam on the boiler, the top

of his gauge-rod was so short as to fall three inches below the top of the muzzle of the steam-gauge, and therefore did not indicate so much pressure as the gauge of the other boiler, that is, did not indicate the whole amount of pressure by three inches.

Edwin Bell, Fireman.—Was in charge of the starboard boiler at the time of the accident. Left New-York with seven inches steam, and carried about the same pressure till through Hurlgate, after which carried 12 or 13 inches till dark.

Was then directed by Mr. Younger to keep 8 or 9 inches, which was done till 8 o'clock, when witness took his watch below. Came on duty, and took the fire again at Saybrook. At which time there were 8 or 9 inches of steam on, and the fire was run down. Capt. Waterman came and asked witness about the water. Examined and found three full cocks. Witness had no occasion to supply his boiler by the hand-pump. At Lyme, the steam-gauge was at 12 or 13 inches, and on reaching Essex, the gauge-rod was within 3 or 4 inches of the upper deck.

When the boat stopped it soon rose to the deck. Witness then turned off the condensed water from the steam-gauge, which caused it to fall about two inches, but it soon rose as high as before. Tried the water-cocks, and found good solid water at three lower cocks, and steam and water at the upper cock. Went over to the larboard boiler when first we stopped at Essex, and found 3 cocks of good water, and the gauge-rod three or four inches from the deck. The gauge-rod of the starboard boiler usually stood higher than the one in the larboard fire-room.

Witness never saw the float rods of the steam-gauges so high as at this time. Has run in the boat from her first trip. Witness told Giles (Farnham,) when the latter came into his room, "that they would not have to fire up more than once more during the whole watch."

There was a light fire kept up between Lyme and Essex. Witness heard no steam blowing off at Essex. The accident happened about 3 o'clock in the morning. The New England came out from New-York before the Boston. At 8 o'clock the Boston was about two miles astern.

Isaac Seymour, Mate.—Agrees in the statements made by Mr. Vail. In the Sound, from Sands' Point to Matinecock Point, the steam stood at the pressure about 8 inches, and Mr. Marshall was sometime blowing off. Marshall said that it was made faster than he wanted it, and he should speak to the firemen. Thinks there were 10 or 12 inches on the gauge in the engine-room, at the time when the boat was anchored at Saybrook, and they commenced blowing off. Saw the water tried in the boilers at Saybrook, which showed plenty. The larboard boiler was then pumped into by hand.

Perceived no difficulty in working the boat, except at Saybrook. Was not apprehensive of any accident. Was employed in landing with the small boat at Essex. Saw Mr. Marshall visit the fire-room just before the landing at Essex. Witness was facing the dock when he first heard a cracking noise, and was in the act of turning towards the steamboat when the explosion instantly followed.

The larboard boiler, which was nearest to witness, exploded a little before the other. Could just perceive the difference.

Roswell Potter, Engineer.—Witness has run the New England as engineer since she first commenced running, except the first and last trip, when he stayed back on account of ill health. Had no reason to expect that any thing would go wrong. Usually carries from 14 to 17 inches of steam on the boilers of the New England. The engine is intended for carrying 16 to 18 inches. Safety valve, as loaded at the time of the accident, would begin to blow off at 18 inches. Had three steam-

gauges, which would rise from 31 to 32 inches without blowing out the mercury. Steam-gauges of this length are now used in the steam-boats. The gauges in the fire-rooms would stand $3\frac{1}{2}$ inches higher than the engineer's gauge in the engine-room; supposes this to be owing to the loss of heat from the steam in passing through the steam-pipe. Has run with Capt. Bunker to New-Haven, with steam at 8 inches. This was several years ago. Boilers are now made stronger than those which were formerly used.

The extreme of safe pressure on the boilers of the New England he thinks to be 22 to 24 inches. The boat would not sail faster with this pressure than with 17 inches. Has had 24 inches on the boilers; once, when the boat was on trial, and at other times since. This was occasioned by stopping the engine. Has not seen the gauge rods rise as high as the boiler deck in any case. Witness examined the steam-gauge in the engine-room after the accident, and found it in perfect order, with the mercury remaining in the gauge. Also, found mercury in one of the fire-room gauges, both of which were torn down by the explosion. The height of the gauge rod, when up to the deck in the fire-room, would be 28 inches. After turning off the condensed water from above the mercury, we get the true gauge. Has not known any racing with the New England, except with the steamboat Providence, on which occasion had bad wood, and could get a pressure of but $11\frac{1}{2}$ inches. The engineer must stand constantly at the engine to attend to the orders of the pilot. Was engineer of the steamboat Oliver Ellsworth for several years, and usually carried from 12 to 14 inches of steam on the boiler of that boat. The Oliver Ellsworth has the strongest boiler. The latter is made of stouter copper than those of the New England, is $9\frac{1}{2}$ feet in diameter by $16\frac{1}{2}$ feet in length, and is stronger braced than any boiler the witness has ever seen. The engine of the New England is nearly four times the power of that of the Oliver Ellsworth. Thinks that the middle legs of the boilers were heated, and that they now appear to be annealed, and different from the outside of the boiler. The force pumps of the New England are very large, and will fill the boilers running over full from Saybrook to Essex. The New England will steer well with 8 or 10 inches steam in smooth water. The Oliver Ellsworth formerly carried from 12 to 14 inches, and now carries 16 to 18 inches. The McDonough carries 12 to 14 inches. On being further examined, witness says that one of the boilers of the New England was patched twice on the middle leg at the after end, and that a similar patch was put upon the same part of the other boiler. There was a crack in the flange at this point, which made it leak, but these repairs did not stop it. This was the trip previous to the accident. The safety valve would commence blowing off at 18 inches, but had carried 24 inches with the same weights, with the steam blowing through the valve. The boilers had not been proved above 24 inches. Had found the brace-bolts between the top of the furnace and the connection of the flues to the steam chimney, to be leaky, owing to a straitening in the angle of the braces. Had taken them out, and put strait screw bolts in their stead. This was on the second trip which the boat made. Considers the engine to be of 120 horse power.

Adam Hall, Engineer.—Witness is chief engineer of the establishment of the West Point Foundry Association. Made the engine and boilers of the New England. The boilers were 8 feet 4 inches wide, 8 feet high, and about 15 feet long. Each boiler had two arched flues and five circular return flues of 16 inches in diameter.

The arches were made of rolled copper, No. 3, wire gauge, the outer shell of No. 4, and the circular flues of No. 5. The boilers were placed one on each guard of the steamboat, at the

distance of about 25 feet from the engine. The boilers were strongly braced with $\frac{3}{4}$ inch bolts through the legs or flat sides, at the distance of 9 inches, and the arches were secured to the upper parts of the boiler by long bolts of $\frac{3}{4}$ inch copper, with screw fastenings. The steam-pipes were also of copper 10 or $10\frac{1}{4}$ inches in diameter, and the safety valve was of the diameter of $10\frac{1}{4}$ inches. The latter was calculated to blow off at a pressure of 20 inches; but the lever was afterwards shortened to about two feet, and new weights added, after the boat commenced running. There were four water cocks on each boiler, for ascertaining the height of the water.

The lowest of these cocks was three inches above the highest part of the upper flues, and each successive cock was placed three inches higher than the preceding one, the upper cock being twelve inches above the flues. Witness had proved the boilers. Thinks that the boilers should have borne fifty pounds to the square inch, if there had been no previous imperfection. The strength of copper, as compared with iron, is nearly as 3 to 5. The difference witness says is 60 per cent. in favor of iron. Copper has been preferred as a material for boilers, because it suffers less from corrosion. Copper is weakened by the action of heat at about 250 degrees. The strength of iron is increased when exposed to heat up to a certain point of temperature. A copper boiler will bear a greater pressure when cold than when heated. An iron boiler, if not heated beyond 450, will bear a greater pressure than when cold. Has tried experiments with Mr. Stevens on a flat iron boiler, braced at distances of 8 inches, with $\frac{3}{4}$ inch brace bolts, at distances of 6 inches with $\frac{3}{4}$ bolts, and at 5 inches with $\frac{1}{2}$ inch bolts. One of the $\frac{3}{4}$ bolts broke at 756 pounds to the square inch. Three of the $\frac{1}{2}$ bolts gave way at 256 pounds to the inch, and $\frac{1}{4}$ inch braces stood this pressure without injury. The power was applied by a water press, the safety valve being carefully loaded with an addition of 10 pounds at each trial. Witness thinks, from the appearance of the metal, that the rent of the boilers must have commenced in the arches near their connection with the after end. Knows Alexander Marshall, and would have no hesitation in trusting him with the care of an engine in any case. Witness employed him to take charge of a high pressure engine last winter.

Henry Waterman, Jr., Captain of the New England.—Left New-York without working the engine warm, and run the steam down to 4 or 5 inches. The Boston left soon after us, and came up strong till we got through the gate. Then got on 10 or 12 inches of steam and drew away from the Boston. Might be $1\frac{1}{2}$ or 2 miles ahead at $7\frac{1}{2}$ to 8 o'clock. At this time felt a little alarmed for the laboring of the engine in the heavy sea with 12 or 15 inches. Usually works 14 or 18 inches when in full speed. Was often in the fire-room, till half past 10, when he retired. Below Falkner's Island, the wheelrope got foul, which brought him on deck, the boat being in the trough of the sea. Crossed the bar, and got into the river at 1 o'clock, it being low water. Made two attempts to land at Saybrook, and failed, owing to there being no one to fasten a line on shore. Anchored in consequence of a difficulty in moving the valve rods, and blew off the steam. Observed the fireman pumping up one of the boilers, and ordered others to assist him. When the engineer was ready, got under way immediately, and went to the wharf. Heard no complaint of the boat behaving worse than common. Saw nothing unusual or alarming. Carried less steam in the sound than usual, on account of the heavy sea. Should have carried from 12 to 18 inches had the water been smooth. Had a favorable passage excepting the heavy sea. Did not notice the state of the steam after leaving Saybrook. Had no apprehension, or fears of any kind at the time, and had heard none expressed by the passengers,

Fig. 1—Longitudinal Section.

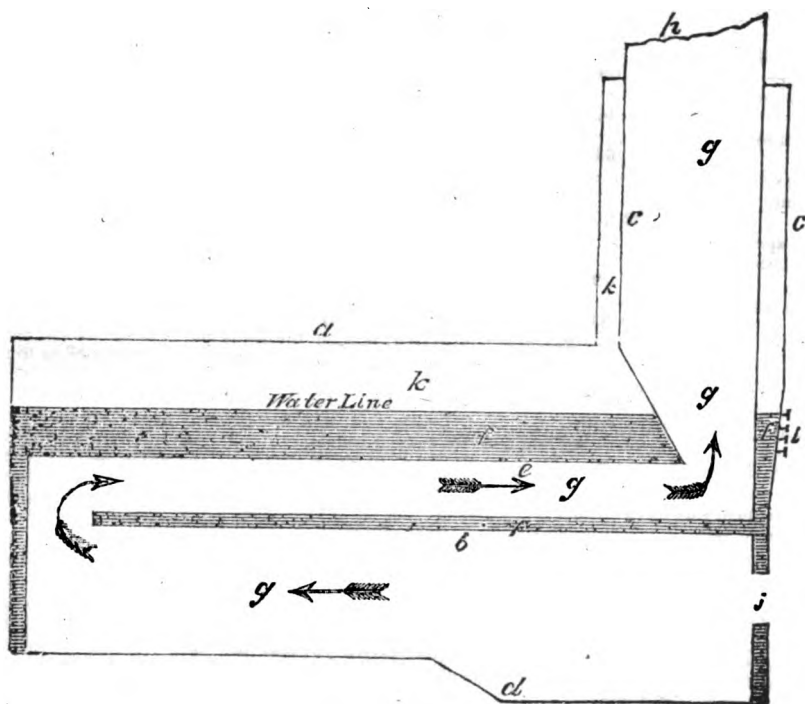
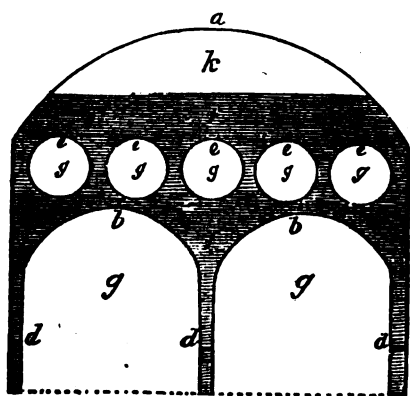


Fig. 2—Cross Section.



REFERENCES.—a the outer shell of the boiler; b b the arches or tops of the main or furnace flues; c c the steam chimney; d d d the water-legs; e e e e e the upper or return flues; f f f the water in the boilers; g g g g g the passage for the fire through the flues to the chimney; h the iron chimney-pipe, cut off above its junction with the steam chimney; i the furnace door; j the chamber; k the water-cocks.

or other persons on board. Had full confidence in the perfection and strength of the boilers and machinery. This confidence was derived from the experience we had already had. Witness has been five years in the steamboat business, and has had charge of a boat for the last 3 years. Was making no unusual exertions to reach Hartford early, and felt no inducement to such a course.

Has accidentally fallen in company with other steamboats since he has run the New England, and had not been able to keep as much steam while so in company as was desirable, the boilers being too small for the engine, and could not, on an average, in these cases, keep more than 13 inches. Six persons were blown overboard by the explosion, of whom two were drowned. Witness is not able to form an opinion as to the immediate cause of the accident.

Mr. Samuel M. Hayden.—The witness lives at Essex, about 25 rods from the spot where the disasters occurred. Heard the steam when the New England arrived at Essex, the noise of which continued while the boat was landing. Witness doubts if it was three minutes from the time he first heard the steam, till the explosion took place.

His first knowledge of the arrival of the steamboat was from hearing the steam. There were two distinct explosions, following very closely, and "lapping on to each other." The last explosion appeared to be the sharpest.

Fifteen persons have died, including those whose bodies were found in the river.

Such is the evidence which was submitted to our consideration. It was also testified by one of the firemen, that the damper, by means of which the fire is held in check, was not closed during the stop at Essex, a fact which has not been recorded in its proper place. We consider it a remarkable fact, as well as an important circumstance in respect to the success of our investigation, that we have been able to obtain the testimony of the engineers and firemen who were on duty at the time of the explosion, all of whom were providentially saved. This has relieved the case from much of that obscurity which has rested on other disasters of this kind, where those immediately in charge of the boilers and engine have been the principal sufferers.

We annex sketches of the longitudinal and cross sections of the boilers of the New England, reduced from the original drafts from which the boilers were constructed, which will serve to illustrate the foregoing descriptions.

The various theories and conjectures which have been put forward to account for this disaster may be comprized under the three following heads.

1. The production of some gas, (probably hydrogen,) suddenly evolved in great quantity.
2. A supposed injurious heating of the water legs, (d d d, Fig. 2,) and lower parts of the

boiler, in consequence of water being driven by the steam into the upper part of the boiler, and perhaps causing a rapid production of steam on its return to the heated metal.

3. A deficiency, at the time of the accident, in the quantity of water which it is necessary to carry in the boilers, owing to the carelessness of those in attendance, or to their being deceived in the examination of the water-cocks. It has been supposed that the metal of the boilers may thus have been weakened by heat or that the sudden suffusion of water on the metal thus heated, occasioned by the sudden discharge of steam at the safety valve, may have generated steam in such quantity, and in a manner so instantaneous, as to destroy the boiler.

4. Stress of steam, accumulated beyond what the boilers were able to sustain.

1. It is supposed by some that the explosion was produced by gas.

2. Others ascribe the explosion in question, to an over heating of the water legs of the boiler.

3. By others, the explosion is ascribed to deficiency of water.

After some lengthy objections to these suppositions, which we have not room for, they state—

"We are constrained to adopt the remaining conclusion, and give it as the unanimous opinion of the board of examiners,—That the explosion of the steamboat New England was caused by the pressure of steam, produced in the ordinary way, but accumulated to a degree of tension which the boilers were unable to sustain."

[For the American Railroad Journal.]

Mr. Editor: I wrote an article in your Journal, volume II, page 756, "on the southern termination of the Boston and Providence Railroad," which is replied to by a writer in your Journal, volume II, page 788; who attempts to convey the belief that it is the "termination of the Stonington and Providence" Railroad that is in question, instead of the Boston and Providence; by which disingenuous subterfuge, an attempt is made to deceive the public.

The low insinuations of a personal nature do not affect the merits of this question, and can have but little weight with a discerning community, who may chance to read the communications alluded to. Among other erroneous statements, this writer, referring to the Pawtucket Company, says—"These men profess to have an entire confidence on the committees appointed for the sole purpose of considering the termination spoken of." I will answer that, so far as that relates to the committee of the Boston and Providence Railroad Company, that no such confidence has been expressed.

The writer above referred to "offers his congratulations to the Pawtucket Company, on the sagacity of their counsel." Far better had this writer reserved his congratulations for the "Boston and Providence Railroad Company," whose cause, I presume, he means to espouse, (though he attempts to disguise it.)

On the honesty and integrity of their advocate, as manifested by his own false and puerile communication. As the writer above alluded to does not enter into the merit of the question, no farther remark here is necessary, but shall, in a future communication, refer to the subject of the

"Southern Termination of the Boston and Providence Railroad."

HEATING STOVES.—The wood used in close stoves should be sawed to the length of three or four inches, and put as near the door or draft as possible; one or two sticks, if placed parallel to the door, will produce a much greater body of flame than if placed in the usual direction.

ANNUAL REPORT OF THE COMMISSIONERS OF THE CANAL FUND.

The annual report of the Commissioners of the Canal Fund, was presented to the Assembly on Wednesday. It appears from this report, that the total amount of tolls collected on all the canals of the State, for the year ending 30th Sept. 1833, is as follows, viz:

Erie and Champlain canals,	\$1,324,421 63
Oswego canal,	20,950 23
Cayuga and Seneca canals,	14,783 59

\$1,360,155 45

The expenses of collection are deducted from the tolls received by the collectors, which add, say

25,800 00

And it gives, as the total amount of tolls,

\$1,385,955 45

The Erie and Champlain canal fund, has a considerable revenue in addition to that derived from canal tolls. The highly prosperous condition of this fund, is exhibited in the report as follows:

The actual amount of revenue received on account of the Erie and Champlain canal fund, from all sources, from the 30th September, 1832, to 30th September, 1833, is as follows, viz:

From tolls,	\$1,324,421 63
Vendue duty,	181,014 23
Salt duty,	227,860 05
Interest upon deposits of surplus monies,	122,236 74
Interest upon loan to Albany, and upon investments in stocks,	18,083 16
Interest on bonds for sales of lands,	934 43
Penalties, and sale of stone at little basin,	64 17

Total revenue,

\$1,874,614 41

The actual amount of expenditures during the year has been as follows, viz:

For interest on loans,	\$357,794 88
Repairs of the canals by superintendents,	330,759 44
Expenses on account of canals, by Canal Commissioners,	35,264 66
Salaries of Weighmasters, assistants, &c.,	4,602 25
Salary of clerk, and other incidental expenses,	447 34
Printing, including circulars, blanks, and all other printing for the canals,	2,016 61
Tolls refunded,	551 22
Costs of suits brought for penalties for violations of canal regulations,	489 21
To the proprietors of the Albany basin,	6,470 25
To Samuel Young, Canal Commissioner,	304 14
To George W. Newell, 2d Deputy Comptroller, canal department,	453 08
For clerk hire in the canal department of the Comptroller's office, estimated for one year,	1,300 00

739,453 08

Thus showing the nett revenue of the Erie and Champlain canal fund, after paying all expenses, to amount to the sum of

\$1,135,161 33

The report states the amount of surplus funds under the care of the Commissioners, on the 30th Sept. 1832, at

\$3,055,247 65

And the amount received since, up to 30th Sept. 1833, at

1,875,655 50

Making a total sum to be accounted for by the Commissioners, of

\$4,930,913 15

This sum is accounted for as follows, viz.

Paid for interest on canal loans,

\$356,794 88

For purchase of canal stock, viz:

5 per cents of 1837, \$414,346 47

6 per cents of 1837,	723,039 51
5 per cents of 1845,	428,924 05
	1,566,310 03
To canal superintendents,	330,759 44
To Canal Commissioners,	35,264 66
To Crooked Lake Canal Fund, premium on stock,	20,402 26
For sundry expenditures on account of the canals,	13,406 79
For clerk hire in the canal dept.,	5,390 33
	2,328,318 39

Leaving a balance in the hands of the Commissioners, on the 30th Sept., 1833, applicable to the canal debt, of

\$2,602,594 76

Of this balance there was in deposits and on loan in sundry banks, on the 30th Sept., the sum of \$2,510,941 81

Loaned and invested in stocks,

91,652 95

2,602,594 76

The Erie and Champlain canal stocks are redeemable in 1837 and 1845. The following statement exhibits the amount of stocks unpaid at the close of September 1832, the amount redeemed during the year ending 30th September, 1833, and the amount outstanding at the latter period, viz:

Six per cents of 1837, outstanding 30th Sept. 1832,

\$2,093,500 00

Redeemed during the year ending 30th Sept. 1833,

663,629 35

Outstanding, 30th Sept. 1833,

\$1,429,870 65

Five per cents of 1837, outstanding 30th Sept., 1832,

\$1,395,500 00

Redeemed during the year ending 30th Sept., 1833,

391,250 17

Outstanding, 30th Sept. 1833,

1,004,249 83

Six per cents of 1845, outstanding 30th Sept. 1832 (none redeemed),

850,000 00

Five per cents of 1845, outstanding 30th Sept. 1832,

\$2,662,035 86

Redeemed during the year,

413,497 05

Outstanding, 30th Sept. 1833,

2,238,538 81

Total amount of Erie and Champlain canal stock unpaid, 30th September, 1833,

\$5,522,659 29

From this amount deduct the monies in the hands of the Commissioners at the close of the fiscal year, and applicable to the redemption of this debt, as before stated,

2,602,594 76

And there will remain a balance of the Erie and Champlain canal debt, as yet unprovided for, of

\$2,920,064 53

If the annual receipts for three years to come should equal the revenue for the year embraced in this Report, there will be funds sufficient to pay off the entire debt contracted for the construction of the Erie and Champlain canals, nine years before the latest period fixed by the State for the redemption of the stock.

We quote the following paragraphs from the report:

Redemption of Canal Stock.

"From the foregoing statement it will be seen that since the last annual report, the commissioners have purchased and cancelled \$1,478,376 57 of the stock issued for the construction of the Erie and Champlain canals.

"The 7th sec., title 2d, of chap. 9th of the 1st part of the Revised Statutes, provides that 'the Commissioners of the Canal Fund shall, from time to time, apply the surplus revenues of the canal fund, after paying the interest of the canal debt, to the purchase of canal stock of this state, if in their opinion such stock can be purchased upon advantageous terms; and the certificates of stock so purchased shall be cancelled.

"The Commissioners have for several years been desirous of applying the surplus funds in their hands to the redemption of the debt, in conformity with the requirements of the section above quoted. Their views upon this subject have been presented to the legislature from year to year, in their annual reports.

"During a considerable portion of the year 1832,

the Commissioners kept a deposit of \$20,000 in the bank in New York, where the transfers of stock are made, for the purpose of purchasing stock, should an opportunity offer; but the effort to obtain it in this way proved entirely unsuccessful.

The surplus moneys which have been rapidly accumulating since 1826, amounted, on the 30th September, 1832, as stated in the last annual report, to the sum of \$3,055,247 65. This great accumulation of funds in the hands of the Commissioners, with the prospect of having this sum increased, by the ordinary receipts, to at least six millions of dollars, before any portion of the debt would be payable, has been a source of much solicitude to the Commissioners; and they have been so fully impressed with the importance of availing themselves of the first, and of every opportunity to purchase and cancel the stock, that all the loans and deposits of the surplus moneys have been made with reference to this object.

"The banks which receive the tolls from the collectors, and the general depositing banks in Albany, are under a stipulation to pay the Commissioners' drafts at sight, for the sums held by them respectively; and the banks which have loans from these funds, and pay 4 1/2 and 5 per cent. interest, are liable to be drawn upon by the Commissioners on a notice of sixty days. The measures of the Commissioners have been such, that there has been no period for the last seven years, in which the entire amount of funds under their care could not have been applied to the payment of the debt, on a notice of sixty days; and one half of the surplus has constantly been in a situation to be drawn at sight.

"The Commissioners have no reason to question the ability of the banks to comply with these stipulations. It has been apprehended, however, that if the moneys belonging to this fund were allowed to accumulate in the banks until the year 1837, and were to be at that time drawn for the payment of the entire sum which is then reimbursable, it might occasion a severe pressure upon the customers of the banks, if not upon the banks themselves.

"In the last annual report the Commissioners presented this subject to the consideration of the legislature, that they might, if they thought proper, prescribe limits to the loans to Banks, and also that the remarks of the Commissioners might reach the institutions interested, and prepare them for the event apprehended.

"The Commissioners were so strongly impressed with the importance of applying the surplus funds to the payment of the canal debt, that they determined in January last to redeem the stock, whenever it could be obtained on such terms as would render the purchase equal to an investment at an interest of about 3 1/2 per cent.

"On the 28th of January, the Commissioners received an offer from Messrs. Prime, Ward, King & Co. of \$30,000 of the 6 per cents. of 1837, at a premium of 9 per cent. with the addition of the interest upon the stock, from the 1st of January to the date of the purchase. This offer was accepted, and the persons of whom the stock was purchased, were informed that the Commissioners would redeem any amount of the 6 per cent. stock of 1837 at the same rate, and would pay a premium of 6 per cent. for the 5 per cents. which are reimbursable at the same time; and that these prices would be paid until the 1st of July following.

"This determination of the Commissioners was made known to other dealers in stocks; and letters were also addressed by the Comptroller to a number of the stockholders whose residences were known, offering the premiums before stated, as an inducement for them to surrender the stock."

"On the 1st of August, the stock of 1837 then having about four years to run, the Commissioners resolved to reduce the premium one per cent. and from that time, to the 1st of January, 1834, to pay 5 per cent. premium and the current interest upon the 5 per cent. stock, and 8 per cent. and interest upon the 6 per cents.; and the Comptroller, on the 7th of August, issued a circular, which was sent to all the stockholders whose residences could be ascertained."

"The efforts of the commissioners to obtain the stock were so successful, that the funds in the general depositing banks were soon exhausted,* and it

* The general depositing banks are the Mechanics and Farmers bank, and the New York State bank, of Albany. The deposits in these banks being drawn upon at sight for the current expenses of the canals, and to pay the interest upon the canal debt, the rate of interest paid for these deposits is only 3 1/2 per cent. When the commissioners commenced purchasing canal stock, there was a deposit in the banks of more than six hundred thousand dollars. The commissioners drew upon these deposits to such an extent, that on the 14th June, the amount in the Mechanics and Farmers bank was only \$47,020

became necessary to draw upon the monies which were on deposit at an interest of 4 1/2 per cent. At this rate of interest, upon a calculation merely arithmetical, it would appear less favorable to the interests of the State to purchase the stock at the premiums paid, than to continue the deposits in the banks. But the extinguishment of the State debt, always a desirable object, is peculiarly important in the case of the canal debt, from its connection, by a constitutional pledge, with the regulation of the tolls and the application of the canal revenues.—These, and other considerations, to some of which allusion has already been made, far outweigh, in the opinion of the commissioners, the apparent loss to the fund of about 1 per cent. by the purchase, and are decisive in favor of the policy which has been pursued. It is proper also to add, that the premiums paid have not in general exceeded the market value of the stocks, and the Commissioners had no alternative between paying those prices and suffering the funds to accumulate in their hands."

Loans and Deposites of the Canal Fund Monies.

"Since the last annual report, loans have been made from the surplus funds, at 5 per cent interest, as follows:

Ogdensburgh Bank, at 5 per cent.,	\$30,000 00
Bank of Albany, at 5 per cent.,	50,000 00
Leather Manufacturers' Bank, (N. Y.)	
at 5 per cent.,	50,000 00
Union Bank, (N. Y.) at 5 per cent.,	5,000 00
Yates County Bank, at 5 per cent.,	20,000 00

Total \$200,000 00

Notwithstanding the large sum which has been applied to the extinguishment of the canal debt, the interest received upon the surplus moneys remaining in the banks for the year ending the 30th of September, 1833, amounts to \$122,236 74. The estimated interest for the current year is \$130,120 61."

Reduction of Tolls.

"The Canal Board, in March last, made a reduction in the rates of toll upon wheat, flour, salted beef and pork, butter and cheese, and most of the productions of the country coming towards tide-water, which was equal to about twenty-eight and an half per cent; and a reduction upon merchandize and most articles passing from tide-water, which was equal to about fourteen and one-fourth per cent. upon the former rates. These reductions in the rates of toll, applied to the same commodities which were transported upon the canals in 1832, would have diminished the aggregate amount of tolls about 150,000 dollars. Such, however, has been the increase of business upon the canals, that the amount of tolls received from the commencement of navigation on the 22d of April, to the 30th of September, has exceeded, by the sum of \$209,566 72, the tolls for the same period of the preceding year; and by the sum of \$144,679 76 the receipts for the same months of the year of 1831. The amount of tolls was considerably diminished in July and August, 1832, by the prevalence of the cholera; and therefore the comparison is carried back to 1831, which was a prosperous season for the canals.

"How far the reductions in the rates of toll have contributed to swell the total revenue, by increasing the commodities transported, and how much of this increase is to be credited to the natural growth of the country which seeks a market through the canals, is not easily determined.

"In relation to the trade of the western States generally, the maximum of revenue to the Canal fund, is probably to be attained, by a considerable reduction from the present rates of toll. Merchandize, during the past season, has been transported through the Erie canal, by way of the Lakes and the Ohio canal, to the borders of the Mississippi. To continue and extend this trade, a further reduction of 25 per cent. of the tolls on merchandize, bringing that article within a fraction of the constitutional minimum, is contemplated.

"An arrangement has been made between the canal board of this State, and the Canal Commissioners of Ohio, by which it is expected that a reduction in the rates of toll upon merchandize, of 25 per cent. from former rates, will take place simultaneously upon the New York and Ohio Canals, at the opening of navigation in the spring of 1834.

"If the Canal Board had the power of reducing

the toll upon lead, to one or two, instead of five mills per 1000 pounds per mile, it is supposed that a branch of trade, important to our citizens generally, if not to the canal revenue, might be opened with the mining country between Lake Michigan and the Mississippi river. The revenue could not be diminished, and might be considerably increased, by such a reduction in the rates of toll."

The condition of the lateral canals, as exhibited in the report, is somewhat unfavorable. The tolls are insufficient to keep them in repair and pay the interest upon the debts created in constructing them. The following sums have been drawn from the treasury to make up the deficiencies in the revenues of the several canals named, to wit:

Oswego canal.....	\$12,738 8
Cayuga and Seneca.....	5,226 44
Chemung.....	41,730 28

Total sum paid from the Treasury to make up deficiencies.....\$63,295 54

The debt standing against the state, on the 30th of September, for the several canals, was as follows, to wit:—

Erie and Champlain canal debt.....	\$5,532,639 29
Oswego do.....	327,347 00
Cayuga and Seneca do.....	257,000 00
Chemung do.....	316,000 00
Crooked Lake do.....	120,000 00
Chesapeake do.....	50,000 00

Total.....\$6,673,406 29

CONSUMPTION OF STAPLE ARTICLES IN ENGLAND.

"The following is an accurate estimate of the home consumption of England in the great staple articles of commerce and manufactures. Of wheat, 15,000,000 quarters, or 120,000,000 bushels, are annually consumed in Great Britain—this is about a quarter of wheat to each individual; of malt, 25,000,000 bushels are annually used in breweries and distilleries in the United Kingdom, and there are 46,000 acres under cultivation with hops; of the quantity of potatoes and other vegetables consumed we have no accounts; of meat, about 1,250,000 head of cattle, sheep, and pigs, are sold during the year in Smithfield market alone, which is probably about a tenth of the consumption of the whole kingdom; the quantity of tea consumed in the United Kingdom is about 30,000,000 pounds annually; of sugar nearly 4,000,000 cwt., or about 500,000,000 pounds every year, which is a consumption of 20 pounds for every individual, reckoning the population at 25,000,000; and of coffee about 20,000,000 pounds are annually consumed; of soap 114,000,000 pounds are consumed; and of candles about 117,000,000 pounds; of sea-borne coals alone there are about 3,000,000 chaldrons consumed in England and Wales, and it is estimated that, adding the coals of the midland counties, each person of the population consumes a chaldron throughout the kingdom; of clothing we annually manufacture about 200,000,000 pounds of cotton wool, which produces 1,200,000,000 yards of calico, and various other cotton fabrics, and of these we export about a third, so that 800,000,000 yards remain for home consumption, being about 32 yards annually for each person; the woollen manufacture consumes about 30,000,000 pounds of wool; of hides and skins about 50,000,000 are annually tanned and dressed; of paper about 50,000,000 pounds are annually manufactured, which is about 2,000,000 reams of 500 sheets to the ream.—[Farmer's Magazine.]

BUTTER IN NEW-YORK AND LONDON.—On

the supposition that half a pound of butter is consumed by each inhabitant of this city, in a week, 6,500,000 pounds would be required in a year. This, at 20 cents per pound, amounts to \$1,300,000. This sum is considerably less

than that paid by the inhabitants. Allowing 150 pounds to each cow, 43,333 cows would be required. The following we take from an English paper.

"Butter is very extensively used in this and most other northern countries: that of England and Holland is reckoned the best. In London, the butter of Epping and Cambridge is in the highest repute: the cows which produce the former, feed during summer in the shrubby pastures of Epping Forest; and the leaves of the trees, and numerous wild plants which there abound, are supposed to improve the flavor of the butter. It is brought to market in rolls from one to two feet long, weighing a pound each. The Cambridgeshire butter is produced from cows that feed one part of the year on chalky uplands, and the other on rich meadows or fens: it is made up into long rolls like Epping butter, and generally salted or cured before being brought to market; the London dealers, having washed it, and wrought the salt out of it, sell it for Epping butter.

"The butter of Suffolk and Yorkshire is often sold for that of Cambridgeshire, to which it is little inferior. Somersetshire butter is thought to equal that of Epping; it is brought to market in dishes containing half a pound each; out of which it is taken, washed, and put into different forms, by the dealers of Bath and Bristol. Gloucestershire and Oxfordshire butter is very good; it is made up in half-pound packs or prints, packed up in square baskets, and sent to the London market by waggon. The butter of the mountains of Wales and Scotland, and the moors, commons and heaths of England, is of excellent quality when it is properly managed; and though not equal in quantity, is superior to that produced by the richest meadows.

"Considerable quantities of butter are made in Ireland, and it forms a prominent article in the exports of that country; it is inferior to that of England. Some of the best Irish butter brought to London, after being washed and repacked, is sold as Dorsetshire and Cambridge butter.

"The salt butter of Holland is superior to that of every other country; large quantities of it are annually exported. It forms about three-fourths of all the foreign butter we import.

"The production and consumption of butter in Great Britain is great. The consumption in London may be averaged at about one half-pound per week for each individual, being at the rate of 26 pounds a year; and supposing the population to amount to 1,450,000, the total annual consumption would be 37,700,000 pounds, or 16,830 tons: but to this may be added 4,000 tons for the butter required for the victualling of ships and other purposes, making the total consumption, in round numbers, 21,000 tons, or 47,040,000 pounds, which, at 10d. per pound, would be worth £1,960,000.

"The average produce per cow of the butter dairies is estimated by Mr. Marshall at 168 pounds a year; so that, supposing we are nearly right in the above estimates, about 280,000 cows will be required to produce an adequate supply of butter for the London market.

"But the consumption of butter in London has sometimes been estimated at 50,000 tons; which would require for its supply 666,000 cows!"

83, and in the New York State bank \$48,474 49. It will be seen by reference to the table marked B. that the total sum received by the two banks above named, during the year, was \$1,336,515 47; and that the sum drawn from them by the Commissioners during the same time, was \$1,571,112 43. The accommodation afforded by these banks, in giving drafts on New York, to pay for stock purchased, has greatly facilitated the operations of the Commissioners in cancelling the debt, and has enabled them in all cases to transmit the funds for the payment of stock, on the afternoon of the same day on which notice of its purchase was received.

Report of WALTER GWYNN, Esq., Engineer, to the President and Directors of the Portsmouth and Roanoke Railroad Company.

SUFFOLK, Nov. 18, 1833.

To the President and Directors, &c.:

GENTLEMEN—I have the honor to submit to you the following report and estimate of the probable cost of your railroad:

The ease with which the supposed difficulties in the construction of the road between Portsmouth and Suffolk have been overcome, will dissipate all apprehensions as to the feasibility of the work, and the expediency of the undertaking has been so fully and clearly established by former statements to the company, as to render further comment unnecessary on the present occasion. I shall therefore proceed to the subject immediately before me.

The line which I have selected as the basis of my estimate, commences at the intersection of the western boundary of Portsmouth and the centre line of High street, and proceeds over an extremely level and unbroken surface to an eligible site for crossing by a bridge a branch of the Nansemond River, a few hundred yards north of the termination of the Dismal Swamp Land Company's Canal. Thence continuing the line to Suffolk several spring branches are crossed, requiring the construction of small stone drains and some heavy cuttings and fillings. After leaving Suffolk the character of the country changes and becomes somewhat bold—and in order to diminish the quantity of excavation and embankment several undulations in the plane of the railroad are unavoidably made—the inclinations are, however, gentle, and the line reaches Blackwater without encountering any other difficulties than an increased expenditure on this portion of it. From Blackwater a level is maintained for some distance, the line passes along the borders of the Swamps, which make up to the Highlands and crossing the Nottoway, on the lands of Mr. Rochelle, about seven miles below Jerusalem, it ascends at the rate of twenty feet per mile, passing near Mr. Gurley's, to the Cypress Bridge Road. Thence, leaving Vick's Chapel a little to the south and making a slight undulation to avoid some filling, the line arrives at Captain Barnes's Quarter, on the summit of the ridge dividing the waters of the Nottoway from those of the Meherrin. From Captain Barnes's a descent is effected on a grade of twenty feet per mile to Buckhorn Run. Thence the line is continued, on a level, across the Meherrin, about a mile above Branch's Bridge. It then ascends, varying from an inclination of twenty to twelve feet per mile, until the summit of the railroad is attained, giving an elevation, above the level of tide water, of one hundred and forty-four feet.

Descending from the summit, the line crosses the Petersburg Railroad, (on a level with that road), about two hundred yards south of Captain Garey's. It afterwards crosses the head of Raccoon Swamp, and terminates on the north bank of the Roanoke river, opposite Weldon. Its direction is S. seventy W., and its length seventy-seven miles, being only a half mile longer than the distance on a direct line between Portsmouth and Weldon. On reference to the profile, the inclinations and distances will be found as follows:

TABLE OF ASCENTS AND DESCENTS FROM PORTSMOUTH TO THE ROANOKE.

From Portsmouth to Suffolk.				
Length of grade.		Inclination in feet per mile.	Ascent in feet.	Descent in feet.
Miles.	Feet.			
8	1705	0.000	.....	.....
—	4100	15.048	11.685	5.700
—	2000	3.175	4.763	.....
—	2500	6.864	3.230	.....
—	3320	5.280	8.600	4.500
—	4500	4.224	3.230	2.000
—	4100	3.960	.....	2.550
—	2500	2.640	2.900	1.000
—	3400	2.112	1.960	.....
—	520	1.056	.....	1.760
—	2000	.....	.....	.....
—	4900	.....	.....	.....
—	3520	.....	.....	.....
11 miles				

From Suffolk to the Roanoke.				
Length of grade.		Inclination in feet per mile.	Ascent in feet.	Descent in feet.
Miles.	Feet.			
6	1740	00.00	.....	.....
7	1040	20.00	143.939	182.500
9	660	.....	.....	.....
4	2780	19.00	86.003	45.161
2	1990	.....	.....	.....

2	340	18.000	37.159	.....
2	4840	14.000	40.833	.....
—	3550	12.00	.....	8.067
—	370	11.00	11.770	10.208
—	4900	10.00	.....	12.500
1	1320	0.00	.....	30.085
3	1810	7.00	25.056	.....
3	3060	5.00	10.795	2.746
2	840	4.00	4.099	3.545
—	2900	3.00	3.295	.....
—	4630	2.00	2.008	12.826
1	520	1.00	.....	1.430
1	220	.....	.....	.....
6	2170	.....	.....	.....
1	2270	.....	.....	.....
59 m.	5160 ft.			

From an inspection of the above table, it will be perceived that the greatest inclination does not exceed 20 feet to the mile, and throughout the whole extent of the road there are but few deviations from a straight line, and these are effected on the arcs of circles whose radii are in no instance less than 5730 feet, and are most generally 11,460 feet in length.

Gentle inclinations and easy curvatures (when it is necessary to vary from a straight line) are points of essential importance in the location of railroads; these desirable objects, as well as a line extremely favorable to the advantageous employment of locomotive engines, are here attained. Indeed, considering the straightness and the moderate ascents and descents, the performance of an engine (of given power) will be greater on this than on any other railroad now constructed in the United States. We are therefore enabled to use light engines, thereby diminishing very considerably the great and leading items in the expense of transportation on railroads, viz: wear and tear and repairs.

The engine which it is proposed to use will not exceed five tons weight, and its performance on this road will be equal to that of a six ton engine, on a road with 30 feet grades. From this general view it will be seen, that the face of the country is eminently suitable to the proposed work. The intervening Swamps and the alluvial bottom lands of the Nottoway, Blackwater and Meherrin, offer no serious obstacles. The bottom is every where composed of solid materials, affording a firm foundation for any embankment or other structure it may be necessary to place on it.

Before proceeding with the estimate I would offer a few remarks in relation to the construction of the railroad.

It will not be necessary on the present occasion to discuss the relative merits of the various modes of construction, and the variety of materials which have been used in the formation of railways. Suffice it to say, that the almost universal substitution of wood for stone, and the iron-edge rail, establishes its preference in the first instance, even where stone is abundant and timber scarce. Among the many reasons for this preference of wood are its elasticity, its sufficient stability, and its diminution of the wear and tear of engines and cars. It follows, then, as a necessary consequence, that I recommend for your railroad the use of timber, which is found in abundance, of excellent quality, on almost every part of the line.

The superstructure, then, which I propose to adopt, will be heart-pine rails, nine by five inches, plated with iron bars two inches wide, and half an inch thick, resting on white or post oak sills, ten by twelve inches, and eight feet long, placed across the road, five feet apart from centre to centre. The rails will be placed parallel to each other four feet eight and a half inches apart, let into the sills and properly secured by white oak wedges. The sills will be notched for the reception of the rails and wedges, and hollowed out in the middle, so as to admit of the construction of a path over them, which will add considerable stiffness to the road, at a very moderate expense, and adapt it to the use of either horse or locomotive power, or both.

WIDTH OF ROAD-BED.—I have estimated for a single railway, which for the present will afford sufficient accommodation to the trade and travel. The ditches, however, will be cut, and the waste earth disposed with a view to a double track, whenever it may be deemed necessary. The graded surface of the road-bed in excavations, will vary from 18 to 16 feet in width, the slopes being 45 degrees. The graded surface on embankments will present a uniform width of 12½ feet, with side slopes of 33½ degrees, or 1½ base to 1 perpendicular.

Between Suffolk and Spikes' Run we shall pass several small streams by means of stone drains. The stone for this purpose can be readily obtained at Port Deposit, and the work done now, on as reasonable terms as at any other period. Farther on, wooden structures will be thrown over the water courses, with a span affording sufficient room for the erection here.

after of stone or brick culverts. The bridges across the Blackwater, Nottoway and Meherrin rivers, will be supported by abutments and piers of masonry, the stone for which can be transported by water from Norfolk to their respective sites, and will not at most exceed \$5 per perch (of 25 cubic feet) delivered. On approaching the Roanoke, rock is found tolerably convenient to the line, and will probably be used in crossing the Oconeechee, Troublefield, and Raccoon Swamp.

[To be continued.]

[For the American Railroad Journal.]

Mr. EDITOR—The Delaware and Hudson Canal Company have put in the Delaware, on the North river, "Disbrow's Combined Steam Boiler," to test the best method to create steam with anthracite coal; and the following are some of the many benefits derived:

1st. This new boiler, in the Delaware, will generate steam faster with Lackawana coal than the old boiler, which was much larger, ever did with the best pine wood.

2d. The saving of fuel, by these experiments, has been proved to be 25 per cent.; and competent and experienced judges say, that no doubt one half may be saved.

3d. The saving of labor in tending s at least one half.

4th. But little room will be required for this fuel, on board the boat; and no detention of boat occasioned in putting it on board.

5th. And last, though not least, in the minds of passengers, a boiler of this construction, with one row of cones, can be so disposed of, on the wings of the boiler, that in case of explosion it would be thrown overboard.

All persons building new boats would be richly repaid by examining the great advantages obtained by this experiment.

I will send you a drawing, to be inserted in a future number, that a description of this boiler, and a knowledge of its utility and advantages, may be widely extended.

A. Z.

AGRICULTURE, &c.

USEFUL INSTRUCTIONS REGARDING THE MILKING OF COWS.—The operation of milking is performed differently in various parts of the country. In some, the dairy-maid dips her hand into a little milk, and by successively stripping the teat between her finger and thumb unloads the udder. The plan, however, is attended with the disadvantage of irritating more or less the teat, and rendering it liable to cracks and chaps, which are followed by inflammation, extending to the rest of the quarter. This accounts for the disease occurring more frequently among the cows under the charge of one milker than it does in those which are under the charge of another; and, as this practice is more common in some parts of the country than in others, it also accounts for the disease being more common in these parts. This plan of milking, where the irritation is not sufficient to excite the extent of inflammation to which I have alluded, frequently produces a horny thickening of the teat, a consequence of the cracks and chaps, which renders it more difficult to milk than when in its natural state; and, at the same time, predisposes to inflammation, when any cause occurs to set it up. These effects may be, and are almost entirely avoided, by the more scientific plan of milking adopted in other parts of the country, where, instead of drawing down or stripping the teat between the thumb and fingers, the dairy-maid follows more closely the principles which instinct has taught the calf. (The calf jerks its nose into the udder, and forces down the milk.) She first takes a slight hold of the teat with her

hand, by which she merely encircles it; then lifts her hand up, so as to press the body of the udder upwards, by which the milk escapes into the teat, or if (as is generally the case when some hours have elapsed between milking-times) the teat is full, she grasps the teat close to its origin with her thumb and fore finger, so as to prevent the milk which is in the teat from escaping upwards; then making the rest of the fingers to close from above downwards in succession, forces out what milk may be contained in the teat through the opening of it. The hand is again pressed up and closed as before, and thus, by repeating this action, the udder is completely emptied, without that coarse tugging and tearing of the teat, which is so apt to produce disease.—[Quarterly Journal of Agriculture.]

MEANS OF RENDERING THE VINE MORE PRODUCTIVE.—A foreign journal, of some ability recommends four ounces of alum to be mixed with four pellets of clay, by means of a sufficient quantity of water, and the roots of the vine being uncovered on a fine day towards the end of winter, they are to be moistened with this mixture, and the earth then changed, so that what was previously uppermost shall be undermost. It is asserted that through this operation a vine produces a great additional quantity of grapes.

INCREASE OF BEES.—The recent improvements in preserving bees will probably produce very great additions of honey, at a much cheaper rate. We still import honey from the Havana. The following we extract.

“It is not to be expected that many will attend to bee-husbandry merely for the sake of pleasure, but profit may induce others to follow that employment during their leisure hours. Often has the industrious laborer or mechanic been relieved from embarrassed circumstances, by the toil and labor of a swarm of bees, when he could avail himself of no other mode of relief. Not only are bees of immediate profit to their owners, but were they encouraged to the extent of which the pasture of the United Kingdom would permit, they might become even a source of national wealth. It is estimated by persons of learning, that the pasture of Scotland could maintain as many bees as would, on an average, produce 4,000,000 pints of honey, and 1,000,000 pounds of wax. Were this quantity tripled for England and Ireland, the produce of the empire would be 12,000,000 pints of honey, and 3,000,000 pounds of wax, annually. The income that would thus arise from honey, at the very moderate price of 5s. per pint, would amount to £3,000,000 sterling; and the wax, at 1s. 6d. per pound, would produce £2,225,000 sterling, affording, in round numbers, a total of £3,225,000 annually. The rearing of the bees must, therefore, appear to be an object worthy of the consideration of all who feel an interest in the welfare of their country. As there are few concerns more profitable than bees, in favorable seasons, considering the small expense that attends them, I humbly beg leave to lay before my readers the following estimate. Suppose a person to commence with only two hives, which may cost £3 10s. sterling, and allowing each hive, on an average, only to double its number annually, they would increase as follows in a period of ten years—

1st year, 2 hives; 2d, 4 do.; 3d, 8 do.; 4th, 16 do.; 5th, 32 do.; 6th, 64 do.; 7th,

128 do.; 8th, 256 do.; 9th, 512 do.; 10th, 1024 do.

At this rate, two hives would produce one thousand and twenty-four swarms in the period of ten years, which, at a very moderate calculation, would be worth £1 15s. sterling, each, so that there would be a clear profit of £1,792 sterling, for a little attention to the rearing and proper management of the bees, allowing the second and third swarms to pay for the hives, stools, labor, and incidental losses. It may be supposed by the above estimate that the seasons are favorable, but allowing 50 hives to fail from various causes, there would still remain £1,700 10s. sterling of clear profit. The years 1824 and 1825 were very favorable for bees, the latter was remarkably so. Almost every hive that year swarmed once, many of them twice, and a few even three times. When the store was collected, they weighed from 25 to 40 pounds each hive. Notwithstanding, I read in the public papers that honey to the value of £240,000 sterling had been imported into Great Britain in the course of this same year, 1825; a most extraordinary sum, and one which in my humble opinion might have been easily saved to the nation, if a stricter attention had been paid to the proper encouragement of our own bees.—[The Bee Garden.]

SKINLESS OATS.—At the meeting of the Warwickshire Agricultural Society, a specimen of the *Avenaica Farina*, or skinless oat, was produced by the Rev. Mr. Knott, which had been plucked that morning out of a piece of ground belonging to that gentleman, at Wormleighton. It was produced from seed furnished to him from Mr. Trucker, of Heanton Punchardon, near Barnstaple, Devonshire. According to the account furnished to us by that gentleman, it was grown in the season of 1830, for the first time it was ever produced in Great Britain, by Thomas Derenzy, Esq. of Clebemon Hall, who obtained the seed through a friend of his at Rotterdam, whether it was imported from Shantag, a remote district in China, and was quite unknown to Europeans till within these three years. The advantages which this extraordinary and valuable grain possesses over all other kinds of oats are numerous, viz.: When thrashed from the sheaf, it is exactly like oatmeal, and it is fit for immediate use for culinary purposes, and every other sort which oatmeal is consumed for, the grain being quite free from every particle of rind or husk. The flavor is delicious, and it contains much more farinaceous matter. There is, of course, considerable saving of oats, and expense of kiln drying, sifting, &c. &c.; and one peck of it contains more nutritious food for a horse than three pecks of common oats. The produce is most astonishing, the average being twenty-six barrels, of fourteen stone, to the Irish acre—the exact quantity grown by Mr. Derenzy on one acre. It was not sown till the 4th May, 1830, and was reaped early in August the same year. It is remarkably hardy, and well adapted to this climate.

POTATOES FOOD FOR HORSES.—An Irish writer on husbandry, whose name is Martin Doyle, and whose works were published in Dublin in 1830, has the following remarks:

With respect to potato-feeding for horses, I recommend it from an experience of some years. My horses are old (one of them at least 20 years of age), but they are in high spirits and condition, from having every eve-

ning after work, excepting during the soiling months [when grass &c. was cut and carried to them,] an abundant supply of boiled potatoes (warm) regularly given to them; but as the authority of T. C. Curwen, Esq. M. P. of Workington Hall, Cumberland, is infinitely more valuable than mine on this subject, I shall quote the following passages from his ‘Agricultural Hints.’

‘It requires from 5 to 6 hours for a horse to masticate a stone [14 lbs.] of hay, while he will eat a stone of potatoes in 20 minutes or less. The saving of 4 hours for rest, is alone sufficient to produce the greatest difference in the health and condition of the animal. After great fatigue also, a horse would be tempted to take warm food when he would not eat hay. I have at this time in my works, horses which were purchased six years ago of a farmer, who was selling off his stock as worn out and of little value, and which are yet able to do their work with the best horses I have. I think there is little doubt of the life of this valuable animal being considerably prolonged by this mode of feeding—I have begun to mix an equal quantity of cut straw and potatoes; racks are, according to this mode of feeding, as unnecessary as they are productive of waste—for to save trouble they are always filled, and what is not eaten is always so tainted with the breath of the animal as to be wasted.’

Probably steamed mangel wurtzel, and other roots, would be valuable as food for horses.—[N. E. Farmer.]

BAYBERRY BARK.—The bark of the root of the bayberry bush, which grows so plentifully in the woods and waste fields of this county, has become of late quite an article of traffic. We learn that it is used at the manufacturing for the purpose of dying. In the town of Harwich, we are informed that a great quantity of this bark, (perhaps 30 tons,) has been collected during the past season by the women and children, who obtain at the stores three cents per pound for it. It is sent to Taunton, Fall River, and other manufacturing places, where it is sold for 12½ cents, and in some instances much higher. It is also used for medicinal purposes. This bark is easily obtained; the bushes grow in a light soil, the roots near the surface; they are pulled up with little strength and dried, and then the bark flies off with a gentle pounding. We believe this is the greatest benefit this county has ever received from the ‘American System.’—[Barnstable Patriot.]

PLOUGHING IN WINTER TO KILL INSECTS.—Professor Rennie says, the common notion of frost killing insects is far from being correct. We, however, give the following from the Bucks County (Pa.) Intelligencer:

Last winter, observing several weeks of open and mild weather, unsuitable for threshing, I ploughed up a stiff sward, in a field which had been infested with the *Wire-worm*, for nearly thirty years. The ravages of this insect had even been so great, that not more than half a crop had been raised on the field during all this time. The ground was ploughed a good depth, say from eight to ten inches. About the middle of April it was well harrowed, and afterwards ridged. I planted about the first of May, and, from the present prospect, I should think the field would average forty bushels of corn per acre—and no *Wire-worms* appeared. I know not whether success is to be attributed to the time of ploughing; but it is an experiment, which, giving a favorable result in one instance, may induce others to examine into the best means of guarding against this potent enemy to agriculture.

AGRICOLA.

NEW-YORK AMERICAN.

JANUARY 13—17, 1834.

LITERARY NOTICES.

No. X.

DETROIT, November 25.

I had just left the reading room of the Franklin Hotel, in Cleaveland, and was making myself at home for the rest of the evening, in my own neat chamber, when the sound of a steamboat bell, about nine o'clock, gave note that one of these vessels, which at this stormy season cannot navigate the lake with any regularity, had touched at Cleaveland on her way to this place. No time was to be lost, and huddling my clothes, &c. into my trunk as quickly as possible, I jumped into a vehicle waiting at the tavern door, and in a few minutes was upon the quay. Here I witnessed a scene of indescribable confusion. The night was dark and somewhat gusty, and the boat and the wharf were both crowded with boxes, bales, and the effects of emigrants, who were screaming to each other in half as many languages as were spoken at Babel. Lanterns were flashing to and fro along the docks, and hoarse orders and countermands, mingled with the harsh hissing of the steam on every side. At length we pushed from the shore, and escaping in a moment from the head of the mole, stood fairly out into the lake, while the bright beacon of the Cleaveland lighthouse soon waned in the distance, and was at last lost entirely. I found myself, upon looking around, on board of the fine steamboat "New-York," captain Fisher, to whose politeness I was much indebted for showing me about the boat before turning in for the night. Taking a lantern in his hand, and tucking my arm under his, he groped about among his motley ship's company like Diogenes looking for an honest man. Our course first led us through a group of emigrants collected around a stove mid-ships, where an English mother nursing her infant, a child lying asleep upon a mattress, and a long-bearded German smoking his meerschaum on the top of a pile of candle-boxes, were the only complete figures I could make out from an indefinite number of heads, arms, and legs, lying about in the most whimsical confusion. Passing further on we came to two tolerable cabins on either side of the boat just forward of the wheels, both pretty well filled with emigrants, who were here more comfortably bestowed. We next passed the forward bar-room, (there being another abaft for cabin passengers,) and finally came to the bow, of which a horse and several dogs had already been the occupants for so many days, the New-York having been twice driven into port and delayed by stress of weather, that it might have been mistaken for either stable or kennel. A noble English blood-hound, the second dog only of that rare breed that I have ever seen, here attracted my attention, and delayed me until I made his acquaintance, which was but a moment, however, for every dog of a generous strain can tell instinctively when a friend of his kind approaches him. Among others of the canine crew, too, there was a fine spaniel, whose deplorable fate subsequently I may as well mention here as elsewhere. The master of poor Dash, it seems, went ashore during the night at Huron, where the boat put in to land way-passengers, and the animal springing eagerly along a plank at his call, was kicked from his narrow foothold by some brute of a fellow into the lake. The night was dark, and the shadow of the high wharf shut out the few lights on shore from the view of the poor animal, while those on board of the boat led him away from the land. He swam after us, yelling most piteously, until his suffocating cries were lost in the freshening sea, which probably the next morning tossed him a carrion on the shore. Had I witnessed the act of throwing him overboard, I could not have restrained myself from pitching the dastardly perpetrator of the cruelty af-

ter the victim of his brutality: for if there be one trait in men, which awakens in me, indignation amounting almost to loathing of my kind, it is to see human things treating those parts of the animal creation beneath them, as if this earth was meant for none of God's creatures but man. If Heaven ever grants us another revelation, I am convinced there will be yet one more commandment added to the decalogue, besides those which enjoin upon us our duty to God and our neighbor, and that will be, our duty to those of the brute creation, which Providence entrusts to our kindness and our care. But to return to our travels through this floating castle—we next ascended a steep stairway to the upper deck of all, and I here spent some moments rather amusingly in surveying the furniture of the emigrants with which it was crowded. They differed according to their origin. The effects of the Yankee were generally limited to a Dearborn wagon, a feather bed, a saddle and bridle, and some knickknack in the way of a machine for shelling corn, hatching flax, or, for ought I know, manufacturing wooden nutmegs for family use. Those of the Englishman are far more numerous; for John Bull when he wanders from home, would not only, like the roving Trojan, carry his household gods with him into strange lands, but even the fast anchored isle itself could he but cut it from its moorings. Whenever, therefore, you see an antique fashioned looking-glass, a decrepit bureau, and some tenderly preserved old china, you will probably upon looking further have the whole housekeeping array of an honest Briton exposed to your view. But still farther do the Swiss and Germans carry their love of family relics. Mark that quaint looking wagon which lunders up a dozen square feet of the deck. You may see a portrait of it among the illuminated letters of a vellum-bound edition of Virgil's *Bucolics*. It was taken from a Helvetian ancestor that transported Cæsar's baggage into winter quarters. It might be worth something in a museum, but it has cost five times its value in freight to transport it over the Atlantic. What an indignity it is to overwhelm the triumphal chariot with the beds and ploughs, shovels, saddles and sideboards, chairs, clocks and carpets, that fill its interior, and to hang those rusty pots and kettles, bake-pans, frying-pans and sauce-pans, iron candlesticks, old horse-shoes, and broken tobacco-pipes, like trophies of conquest over Time, along its racked and wheezing sides. That short man yonder, with square shoulders and a crooked pipe in his mouth, is the owner; he with the woollen cap, that is just raising his blue cotton frock to thrust his hand into the fob of his sherrivalleys. That man had probably not the slightest idea of the kind of country he was coming to. His eyes are but now just opening to his new condition; nor will he sacrifice a particle of his useless and expensive trumpery, until they are completely open. That man has not yet a thought in common with the people of his new abode around him. He looks indeed as if he came from another planet. Visit him on his thriving farm ten years hence, and except in the single point of language, you will find him (unless he has settled among a nest of his countrymen) at home among his neighbors, and happily conforming to their usages, while that clean looking Englishman next to him will still be a stranger in the land.

I subsequently looked into the different cabins and compartments of the boat not yet visited, and had reason to be gratified with the appearance of all; though the steamboat Michigan, which I have since visited at the docks here, puts me completely out of conceit of every part of the New York, except her Captain. The Michigan, machinery and all, was built at Detroit; and without entering into a minute description of her, I may say, that fine as our Atlantic boats are, I do not recollect any on the Atlantic waters, for strength and beauty united, equal to the M.

It is worth a journey to the Lakes to make a trip in her. A great mistake, however, I think, exists here in building the boats for these waters with cabins on deck, like the river boats. In consequence of such a large part of the hull being above water, they are rendered dangerous during the tremendous gales which sweep lake Erie, and are often compelled to make a port of safety several times during a passage. The English steamers which ply between Dover and Calais are built like other sea vessels; and having their machinery below, can consequently keep on their course in a sea where one of ours would live but a few minutes. I was fortunate, considering the stormy season of the year, in having a tolerably smooth passage across the lake, there being but few persons sea-sick aboard the boat, and I happily not included in the number. But it must be very unpleasant, during a heavy blow, to be tossed on the short cobble sea which the light fresh water of these lakes always breaks into beneath the wind.

We passed a number of islands soon after breakfast in the morning; some of them mere rocks, and others several miles in circumference. On one of these, of a few acres in extent, a row boat, in which a man undertook to transport himself and one or two members of his family to the shore, was wrecked some years since. The father and brother, with a daughter of about 12 years, managed to subsist upon the snakes and snails they found among the rocks, until a passing vessel took them off, after some ten days of suffering.

It was during a shower, shortly after noon, when some low wooded islands on the American side of the lake, with a tall flag-staff peering above the haze from the little town of Amherstburgh on the British shore, indicated that we had entered the mouth of the Detroit river. The wind, which was now beginning to rise into a threatening tempest, compelled us to hug the Canadian shore so closely, that the red-coated sentinel, pacing along the barracks above Fort Malden, was plainly seen from the boat. The river soon after narrows sufficiently for one to mark with ease the general appearance of its banks and the different settlements upon their course. Their appearance must be pretty in summer, when fields and woods show to the most advantage. But now, though slightly undulating, with a sudden rise from the river of some fifty or sixty feet, the adjacent country is too low to be strikingly beautiful. Those, however, who admire the Delaware below Trenton, if they can dispense with the handsome seats which ornament its not very clear waters, may find a charm in the gentle banks and transparent tide of the Detroit river.

The city of Detroit itself stands upon an elevated piece of table land, extending probably for some twenty miles back from the river, and being perfectly unbroken for at least two miles along its margin. Beneath the bluff—for the plain is so high as almost to deserve the name—is a narrow bustling street of about half a mile in length, with the wharves just beyond it; and fifty yards inboard runs a spacious street, called Jefferson Avenue, parallel with the lower street and the river; for three or four miles along this latter, the chief part of the town is built. The dwelling houses are generally of wood, but there are a great many stores now building, or already erected, of brick, with stone basements. The brick is generally of an indifferent quality, but the stone which is brought from Cleveland, Ohio, is a remarkably fine material for building purposes. It is a kind of yellow free stone, which is easily worked when first taken from the quarry, and hardens subsequently upon exposure to the air. There are at this moment a good many four story stores going up in Detroit, as well as other substantial buildings, which speak for the flourishing condition of the place. The want of mechanics is so great, however, that it is difficult as yet to carry on these operations upon the scale common in our At-

lantic cities, although the demand for houses in Detroit, it is said, would fully warrant similar outlays of capital. The public buildings are the territorial Council-house, situated upon an open piece of ground, designated on an engraved plan of the city as "The Campus Martius," a Court house, Academy, and two banks. There are also five churches, a Catholic, an Episcopal, a Presbyterian, Baptist and Methodist. The Catholic congregation is the largest, and their stone church, which after remaining several years in an unfinished state, it is said, is now soon to be completed with funds derived from Rome, will make an imposing appearance when finished. The population of Detroit is, I believe, between three and four thousand—it increases so rapidly, however, that it is difficult to form an estimate. The historical associations, the safety, and commodiousness of the harbor with its extensive inland commercial advantages, must ever constitute this one of the most interesting and important points in the Union, although other causes may combine to make newer places in the territory equally as flourishing as Detroit.

The appearance of the place is any thing but what you would expect from a town founded in the same year with Philadelphia. The ancient houses which formerly stood upon streets hardly ten feet wide, were all swept away in the great fire twenty years since, and the new white dwellings standing upon broad avenues of twenty-five yards, make the town show like a place of yesterday.

I am surprised to find so few military remains in a frontier post so frequently fortified, and which has witnessed so many scenes of border war. A small stone arsenal, with a tall picket fence around it, is the only thing of the kind discoverable, and yet the place is thought by military men to have been sufficiently strong during the last war, to have held out, if properly commanded, against twice the force which the brave General Brock brought against it. The lapse of twenty-two years has not yet cooled the indignation of the inhabitants at its dastardly surrender by Hull. It is necessary to see the ground to estimate properly that besotted act, at which his officers broke their swords, and his men nearly rose in open mutiny, while even the women of the fort shut the gates and declared that their husbands and brothers should not abide by the disgraceful orders of their commander. It is astounding to think how slight an exertion of force might have annihilated the attacking party. They landed about two miles below the town, and advanced in solid column along a straight road, which runs parallel with the river, and is walled inland with a high picket fence, in front of the French farm-houses which line the way. At the entrance of the town, and nearly in front of the handsome hotel where I am staying, were planted two pieces of cannon, loaded with grape and canister. A single discharge must have swept half of the British force into eternity, while the river on one side, and the high picket on the other, would have hedged the remainder in upon a spot where the slaughter of the whole would have been inevitable. The artillerymen were standing with lighted portfires when the order to retire within the fort caused them to fling their matches to the ground, and leave it with disgust. The memory of General Hull, which with that love of glorification that constitutes the weakest point of our national character, was so hallowed in the Eastern newspapers when he died, a few years since, is here held in the contempt that was the due of a man who was sentenced to be shot to death for conduct entailing so much disgrace upon the nation.

I was not a little amused while talking over these events, upon the very scene of contention, with some gentlemen a few evenings since, to hear a person, whom I soon discovered to be an Englishman, sliding into the conversation,

and taking his part of it with equal animation and good feeling; upholding, however, like a leal and true Briton, the acts of his own nation. The conversation was very frank on both sides, although when he spoke of the Kentuckians slaying the body of Tecumseh after the battle of the Thames, I could not trust myself to retaliate by mentioning Proctor's massacre at Frenchtown of the flower of the youth of Kentucky, which, as you know prompted this ferocious act of their countrymen in relation to the fierce but noble savage. The ball of conversation which had hitherto been thrown with equal temper and breeding by better and abler hands, fell into mine, just as "the delicate question of impressment" was suggested by the English stranger, and in begging him to dismiss a matter upon which our views could so little harmonize; I could not help adding the opinion you have often heard me express, that my country should never notice the existence of that national difficulty, except through the mouths of our cannon, that is, that we should regard and treat impressment like piracy or kidnapping on the high way.—"Kidnapping!" exclaimed my well bred antagonist, politely waving the further discussion of the subject of the word, "why, I myself, Sir, have been taken up for kidnapping within the very precincts of this town." He then went on to tell in most admirable style, a series of whimsical adventures which he met with, when on a surveying party on the lakes, just after the last war—"surveying on the lakes twenty years ago," exclaimed I to myself, why, who can this man be? I have already travelled with him since tea, over all Europe, and a greater part of Asia, not to mention the West Indies, and South America, with the whole coast of Africa.) The lively and unaffected relation was every thing to the story, which at once enlisted the attention of all present, but the particulars were barely these:—The stranger, then a subaltern in the British service, was sent by his commanding officer, to catch some deserters, who had escaped by night from the schooner in which the surveying party were embarked, and which was anchored in the Detroit river. He landed on the American shore, and tracing one of the knaves to an Inn hard by, he seized him near the door, handcuffed the fellow, and handed him to his men to take off to their boat in waiting. Then entering the inn the sight of a number of articles stolen by the runaways, induced the young officer to search for the rest of their number. Provoked at his want of success, he very naturally exclaimed, while passing vainly from room to room, "well thank heaven, I have one of the rascals in limbo:" a stout looking fellow present, immediately slid out of the apartment, and for the present, was seen no more. The young Englishman tired at last with his search of the premises, determined to leave the house to look further elsewhere.—His foot was on the threshold of the door.—"Stop there you mister," exclaimed a tall Yankee, bringing a bayonet to a charge at his breast, "you dont come here and kidnap our citizens at that rate, I gues."

"Kidnap your citizens, why my good fellow that was a rascally deserter that I apprehended."

"Deserter or no deserter, we don't want no such doings over our side, and you don't budge from here my hearty, except to go before Gov. Cass."

"Gov. Cass? Why my dear Sir, I have a letter here for Gov. Cass, and am anxious to find him out in person."

It was "no go," however, as the sturdy yeoman said, and he and his comrades at once led our young and hasty adventurer to the residence of the Governor. Detroit was then a military post of the first distinction. The town was crowded with officers and their families, and on that very day there was a levee, at which three general officers, with their respective suites, received company at the Governors.—

The culprit was politely received by the Governor, and being soon drawn within a group of officers, they all heartily sympathized with him and agreed that they might, without thinking, have acted similarly in violating a foreign territory when sent after a scoundrel of a deserter. It was, in short, a mere matter of moonshine, and the young offender need give himself no concern about it, but fill his glass, and let the hour bring forth what it might. To make a long story short, however, our subaltern was soon ordered before the Governor, who in a totally altered manner explained the grave nature of his offence to him, and told him he must be handed over to the civil authority, adding, that if he did not like to go to jail, he might take up his residence in the fort, under the care of Captain O'Follon, whose politeness the English gentleman had already experienced, and under whose custody he was glad to place himself. His stay there he found far from disagreeable, and he spoke with warmth of the courtesy of the officers in walking out with him every day, and keeping up their necessary surveillance over his person in a manner that made it not at all unpleasant. The Grand Jury soon after found a bill against him for the crime of kidnapping "an American citizen, name unknown," and he was held to bail in the sum of \$2000, which was at once forthcoming from a gentleman on the Canadian side. The result of the trial was against the prisoner, but the United States subsequently quashed the proceedings of the Court, and set the culprit at liberty.

This relation, the particulars of which I have since found, are familiar to the old residents of Detroit, seemed from the unaffected yet animated manner in which it was made to strike every one present, and as you may imagine, our interest in the party chiefly concerned, was not a little heightened by our discovering the next morning, that the individual who had made himself so agreeable the evening before, was Captain Vidal of the British Navy, whose enviable reputation as the companion of Captain Owen in his recent arduous voyage of discovery along the coast of Africa, gives one the privilege of mentioning his name, as that of a public man. Capt. V. has just settled on a farm on the Canada side, but so near to Detroit that his society will be an acquisition to a neighborhood remarkable for its agreeableness and elegant hospitality.

I have made several excursions to different places in the vicinity of Detroit. The pleasantest ride perhaps is one along the river on the Canada side; from which Detroit appears to great advantage. Every thing looks dead, though in William IV's dominions, after coming from the bustling American town. The French there insist upon holding on to their acres, and being unwilling to improve their property, its value remains stationary. These French tenures have had their effect too, in retarding the growth of Detroit, and they still check in no slight degree, its advances in prosperity. The French farms are laid out along the river on both sides, with a front of only two or three acres on its bank, while they extend back into the country for half a dozen miles; a disposition of property very unfavorable to agriculture, and only adopted originally, to bring the colonists as near together as possible, for the sake of mutual protection against the Indians. Many of these farms now cross the main street of Detroit at right angles at the upper end of the town, and of course offer on either side a dozen building lots of great value. The original owners, however, persist in occupying them with their frail wooden tenements and almost valueless improvements notwithstanding large sums are continually offered for the merest slice in the world off the end of their longtailed patrimonies. They are a singular race of beings altogether. Mild and amiable, with all that politeness of manner which distinguishes every class of the courteous nation from which they derived their origin—they are still said to be profoundly ignorant. They call Detroit

"the Fort" to this day, and yet few of them know anything of the country whose soldiers first held it. They are good gardeners but very indifferent farmers, and their highest ambition is to turn out the fastest trotting poney when the carriage race commences on the ice at mid-winter. Some of them will own a hundred of these ponies, which, in defiance of snow and sun, run in the woods from one end of the year to the other. The fastest of the herd, which is generally a three minute horse, the owner will keep for himself, or if he parts with him, asks the purchaser two or three hundred dollars for his bargain, while from the rest, for twenty-five or thirty, he may select at pleasure. They are very easy gaited animals, carrying astonishing weights with ease, but their shoulders are so low it is difficult to keep an ordinary saddle on their backs with any comfort. But though generally rough misshapen looking creatures, some are very elegantly formed, and remind me often—while neither resembling the Arabian nor the English horse—of some French drawing I have seen of the spirited steeds of the Balkore, or the rushing coursers of the Ukraine. I am credibly informed that they are known to perform journeys under the saddle of 80 miles a day for 10 days in succession without being at all injured by it. They are thought to have a different origin from the Canadian horse, to which the best of them bears no particular resemblance except in size.

A race of horses might be raised from this hardy stock to vie in vigor and beauty with the magnificent pear trees which are here produced by grafting a delicate fruit upon the tough wild thorn of the country.

The drive to lake St. Clair must be very pleasant in summer judging from what I saw of it during a raw snowy day. The banks of this river are indeed rather low for beauty and the lake itself when you arrive at it, is only a large black sheet of clear water, but the thick set orchards of the French farmers coming quite down to the shore of the river, are pleasing objects in themselves, and with the green islands in the strait, the decaying windmills so frequently recurring along its shores, and the groups of shaggy ponies almost invariably grouped around their base, would enable a painter to eke out a very pretty landscape.

About ten miles from Detroit a United States Arsenal is now erecting, under the superintendence of Lieut. Howard, of the Army; for an introduction to whom I was indebted to two young officers, who rode out with me to visit the place. The day was cold and cloudy, like most it has been my lot to describe to you of late; but my companions were intelligent and agreeable, my horse free and sufficiently fast, and my reception at the end so satisfactory, that I still think of my ride along the lazy banks of the billious looking river Rouge with pleasure. The arsenal, though of brick, is by far the best specimen of masonry I have yet seen here. It is to be regretted, however, that for such a national work the appropriation by government for its erection had not been large enough to have permitted the beautiful Cleveland stone which form the lintels of its doors and windows to be substituted for the perishable-looking material of which the building is now constructed. The taste of Mr. H., which is already evinced by some arrangements in the vicinity, will no doubt induce him to preserve some hoary and fantastic-looking oaks, which cling their gnarled branches within a few yards of the walls, and which even now, stripped as they are of their foliage, are worth a whole forest of common ornamental shrubbery. The trees I have generally seen around our military posts look all as straight and martinet-like as if planted by a drill-sergeant. These veteran oaks stand upon a sloping bank, and as they are too crooked ever to catch the eye of the utilitarian, and to be sawed up into boards, they may, if not now molested, wave yet for a century above these ingenuous idlers who delight to—

—under the shade of melancholy boughs
Lose and neglect the creeping hours of time.

Too much praise can hardly be accorded to the activity of the officer, who, in five months, has reared such a building, and created the village which is already growing up around it in the midst of an unbroken forest. There is a capital tavern, a store, and

two or three dwellings, in the new town of "Dearbornville"—all built since last July. I sat down to dine on a fine haunch of venison, with the veteran General B— and his young Aid, who were together on a hunting expedition in the vicinity. Nothing could have impressed a stranger more favorably with military breeding, than the bland, paternal manner of the gentleman-like old officer to his four juniors present. The deer yet abound within a morning's walk of Detroit, the primitive forest standing untouched within a few hundred yards of the town, immediately in its rear. They are hunted daily at this season, and no slight sensation was made here a day or two since, by the prolonged absence of the General, who had been benighted and lost his way, upon one of these short excursions. The town was about to turn out en masse, when the re-appearance of the hunter, after two days' absence, relieved a very general anxiety.

The tedious length of this letter is sufficient apology for the abruptness with which I must break off.

H.
THE KNICKERBOCKER, for January. PEABODY & Co.—This—in so far as it is original, is a poor number—but its volume is chiefly made up of Mr. Verplanck's discourse before the Mechanics' Institute, which, though excellent, has appeared in another shape, and selections from English annuals, which have no business in an American Magazine purporting to be original.

AURUNGESE, OR A TALE OF ALRASCHID, 2 vols.—Philadelphia, CAREY, LEA & BLANCHARD.—Another novel of the East, setting forth the splendors and the crimes of that region of the sun, and depicting with a vigorous pencil, and, as cannot be doubtful, from personal knowledge, the gorgeousness of Indian scenery, the fierce and implacable feuds of Indian despots.

LA REVUE FRANÇAISE, No. 3. New York, HOSKINS & SNOWDEN.—There is much good reading in this number, which is, moreover, less inaccurate than its precursors in its typography, of the general execution and appearance of which, and of the Magazine generally, we have only to speak with praise. The account of an assault by a Paris mob in 1789, on the Hospital of Lazarus, is new to us, and well told.

THE MILITARY AND NAVAL MAGAZINE, for January. Washington: B. HOMANS.—We perceive we think—and it gives us pleasure—that the two services take a more decided interest in this periodical, dedicated so particularly to their amusement and instruction; under their auspices, and with the aid they can give, it must flourish.

The leading paper in this number, respecting the Navy, with suggestions for its improvement, is worthy of attention. We have heard before, what is broadly stated by this writer, that the efficiency of the Navy is retrograding; and viewing it as we do, as the great arm of our safety and defence, the 'decus et tutamen' of the nation, we would hope that any well considered suggestions for its improvement, may be operative in quarters where the power exists of giving effect to them.

The plan of a *Provident Society*, for the two services, which has been for sometime under discussion, is, as it strikes us, shown to be both unadvisable and impracticable, by the elaborate report of the officers stationed at West Point. Life Insurance Companies offer to officers of the Army and Navy, and all others, dependant upon a salary, the easiest and surest means, at the cost of a little present self-denial, to ensure some provision at their death for their families.

THE YOUTH'S SKETCH-BOOK. Boston: LILLY, WAIT & Co.—It is not yet too late, we hope, to express, as, but for the pressure of other matters, we should have done before, our admiration and approbation of this pretty little book, so well finished, embellished with so many engravings calculated to arrest the attention of young readers, and of which the contents, diversified by prose and poetry, and mostly original, are all of a nature to improve as well as to amuse. It is, too, handsome in appearance, as well as good in purpose and execution.

CONGRASSES.—The following were among the petitions, memorials, &c. called up during the week ending on Saturday last:—

Mr. Hazeltine, the petition of inhabitants of Chataugue Co., for an appropriation to construct a harbor at Portland, Lake Erie.

Mr. Seldon, of the Masters and Owners of Vessels navigating the Hudson, that a Light House may be erected at Leopold Creek—all which were referred to the Committee on Commerce.

Mr. Reed, of Mass., the petition of inhabitants of Nantucket for Buoys in Swash & Tuckanuck Shoals, heretofore presented; and Mr. Fillmore, of Richmond, Hargrave Lee.

Mr. Davis, of Massachusetts, a petition of Thomas Blanchard, of New York, praying that letters patent granted him for an invention of an engine for turning or cutting irregular forms may be renewed.

Mr. Turrill, a petition from inhabitants residing near Lake Ontario, for the construction of a ship Canal around the Falls of Niagara.

Mr. Hiester, for the construction of a steamboat navigation from Chesapeake Bay, up the Susquehanna River, Seneca Lake, and Oswego River, to Oswego; also a similar connection between Lake Michigan and the Illinois River; were referred to the Committee on Roads and Canals.

LEGISLATURE OF NEW-YORK.

January 9.—SENATE.

The President announced the following Standing Committees.

On Claims.—Messrs. Sudam, Tracy, and Fisk.

On Finance.—Messrs. Dodge, Van Schaick, and Halsey.

On the Judiciary.—Messrs. Lansing, Edmonds, and Edwards.

On the Militia.—Messrs. Foster, Maison, and Kemble.

On Canals.—Messrs. Hubbard, Armstrong, and Livingston.

On Rail-Roads.—Messrs. Edwards, Mack, and Maison.

Roads and Bridges.—Messrs. Westcott, Lynde, and Seger.

Literature.—Messrs. Van Schaick, Gansevoort, and Bishop.

State Prisons.—Messrs. McDonald, Seward, and Foster.

Banks and Insurance Companies.—Messrs. Edmonds, Stower, and Armstrong.

Division of towns and counties.—Messrs. Cookling, Fisk, and Mack.

Agriculture.—Messrs. Halsey, Cropsey, and Griffin.

Manufactures.—Messrs. Quackenbush, Cary and Bishop.

Privileges and Elections.—Messrs. McDowell, Westcott and Dodge.

Enrolled Bills.—Messrs. Lynde, Hasbrouck and Seger.

Indian Affairs.—Messrs. Seward, Conkling and Kemble.

Expiring Laws.—Messrs. Tracy, McDowell and Cropsey.

On Expenditures.—Messrs. Stower, Griffin and Quackenbush.

Incorporation of Cities and Villages.—Messrs. Gansevoort, Birdsall and Livingston.

On the Governor's Message.

On the Boundary line between New Jersey and New York.—Messrs. Sudam, Lansing and Livingston.

Relative to the Deaf and Dumb.—Messrs. Birdsall, Dodge and McDowell.

On the Asylum for the Blind.—Messrs. Cropsey, Cary and Hubbard.

On the Asylum for the Insane.—Messrs. Hasbrouck, Lansing and Edmonds.

On Salt.—Messrs. Edwards, Mack and Gansevoort.

County Poor Houses.—Messrs. Fisk, Seward and Westcott.

The Senate then adjourned.

Saturday, Jan. 11.—IN ASSEMBLY.

The Speaker announced the following committees.

Ways and Means.—Wheeler, Myers, Clark, A. J. Parker, Cash.

Grievances.—Anderson, De Graw, Livingston, Healey, Sumner.

Privileges and Elections.—Brasher, Dusenbery, Williams, Mabbett, Terry.

Judiciary.—Haight, Phelps, Gordon, Grinnell, Clary.

Expiring Laws.—Bagley, Martin, Watt, Collier, Harris.

Claims.—Ingalls, Fox, Crosby, Robertson, Cuykendall.

Colleges, Academies and Common Schools.—M'Kean, Begardus, Beardslee, Schermerhorn, Yates.

Engrossed Bills.—Jackson, Case, Hall, Conklin, Nichols.

Erection and Division of Towns and Counties.—O. Robinson, Butrick, Wheaton, Orr, Kingman.

Incorporation of Cities and Villages.—Drake, Wright, Bull, Stone, Enos.

Agriculture.—Kernon, Morehouse, Woods, Temple, Dyer.

Incorporation of Charitable and Religious Societies.—Cargill, Stroug, M'Knight, Bockhoven, Young.

Incorporation and Alteration of Banking and Insurance Co's.—Morris, Willes, Younglove, Bowne, Smith.

Aliens.—Osborne, Ringgold, Chamberlain, Arnold, Lewis.

Canals and Internal Improvements.—Humphrey, Strong, Stevenson, Morrill, West.

Roads and Bridges and the Incorporation of Turnpike Companies.—Angel, Stafford, Campbell, Mabet, Fleming.

State Prisons and Penitentiary System.—Staats, Gordon, Lockwood, Groom, Harkhurst.

Militia and the Public Defence.—Fowler, Tompkins, Ruggles, Ward, Germond.

Indian Affairs.—Snyder, Jones Mitchell, Patterson, Hanbrouck.

Manufacture of Salt.—Strong, Guinnip, Wright, Osborne, Boatwick.

Medical Societies and Colleges.—Winfield, Staats, Stevenson, Anthony, Palmer.

Two Third Bills.—Tompkins, Haight, Archibald, Johnson, Lefever.

Public Lands.—M'Knight, J. P. Robinson, Hunt, Myrick, Grover.

Trade and Manufactures.—Myers, Hough, Barnes, J. B. Parker, Spafford.

Railroads.—Beardsley, Todd, J. H. Parker, Shays, Coe.

Select Committees on the Governor's Message.

On so much as relates to Poor Houses.—Marvin, Culver, Church, Whipple, Emmons.

On so much as relates to Insane Poor.—A. J. Parker, Titus, Dana, Sears, Thompson.

On so much as relates to the Deaf and Dumb.—Hertell, Brasher, Elithorp, Mercereau, Brown.

January 7.—IN SENATE.

Documents accompanying the Governor's Message.

Copy of a letter from the Commissioners appointed to settle the boundary between New York and New Jersey.

NEW YORK, OCT. 20th, 1833.

Sir:—We have the honor to inform you that pursuant to our appointment under the act concerning the territorial limits and jurisdiction of the State of New York and the State of New Jersey, passed January 18th, 1833, and after several conferences with the Commissioners appointed under a similar law of the State of New Jersey, we have concluded an agreement for the purpose of settling the boundary referred to in those acts.

We deem it unnecessary to enter into a detailed account of the course of the negotiation, and will only observe in respect to it, that waiving all discussion of the strict rights of either party, the Commissioners on both sides made such concessions as they supposed to be not only compatible with the substantial interests of each of the States, but conducive to the harmony and welfare of both. Proceeding upon these principles, it will be seen that the middle of the waters which divide this State from New Jersey has been agreed upon as the line of property, with such variations as to include within this State the islands belonging to it; and that this is also to be the line of jurisdiction, except where circumstances render a departure from it proper. This was peculiarly the case with respect to the waters adjacent to the city of New York, and we trust that the jurisdiction necessary for the health, improvement, and police of that city has been amply secured, and that the agreement herewith delivered to you will be satisfactory to the Legislature and to our fellow-citizens generally.

We are, Sir, with high respect, your obedient servants,

B. F. BUTLER,
PETER AUGUSTUS JAY,
HENRY SEYMOUR.

To His Excellency Wm. L. MARCY,
Governor of the State of New York.

Agreement made between the Commissioners on the part of the State of New York and the Commissioners on the part of the State of New Jersey,

relative to the boundary line between the two States.

Agreement made and entered into by and between Benjamin F. Butler, Peter Augustus Jay and Henry Seymour, Commissioners duly appointed on the part and behalf of the State of New York, in pursuance of an act of the Legislature of the said State, entitled "An act concerning the territorial limits and jurisdiction of the State of New York and the State of New Jersey," passed January 18th, 1833, of the one part, and Theodore Frelinghuysen, James Parker and Lucius Q. C. Elmer, Commissioners duly appointed on the part and behalf of the State of New Jersey, in pursuance of an act of the Legislature of the said State, entitled "An act for the settlement of the territorial limits and jurisdiction between the States of New Jersey and New York," passed February 6th, 1833, of the other part.

ARTICLE FIRST.—The boundary line between the two States of New York and New Jersey, from a point in the middle of Hudson river opposite the point on the west shore thereof, in the forty-first degree of north latitude, as heretofore ascertained and marked, to the main sea, shall be the middle of the said river, of the bay of New York, of the waters between Staten Island and New Jersey, and of Raritan bay, to the main sea, except as hereinafter otherwise particularly mentioned.

ARTICLE SECOND.—The State of New York shall retain its present jurisdiction of and over Bedlow's and Ellis' islands, and shall also retain exclusive jurisdiction of and over the other islands lying in the waters above mentioned, and now under the jurisdiction of that State.

ARTICLE THIRD.—The State of New York shall have and enjoy exclusive jurisdiction of and over all the waters of the bay of New York, and of and over all the waters of Hudson river lying west of Manhattan Island, and to the south of the mouth of Spuyten-duyvel creek, and of and over the lands covered by the said waters to the low water mark on the westerly or New Jersey side thereof; subject to the following rights of property and of jurisdiction of the State of New Jersey, that is to say:

1. The State of New Jersey shall have the exclusive right of property in and to the land under water lying west of the middle of the bay of New York and west of the middle of that part of the Hudson river which lies between Manhattan Island and New Jersey.

2. The State of New Jersey shall have the exclusive jurisdiction of and over the wharves, docks and improvements made, and to be made, on the shore of the said State, and of and over all vessels aground on said shore, or fastened to any such wharf or dock; except that the said vessels shall be subject to the quarantine or health laws, and laws in relation to passengers, of the State of New York, which now exist or which may hereafter be passed.

3. The State of New Jersey shall have the exclusive right of regulating the fisheries on the westerly side of the middle of the said waters, provided that the navigation be not obstructed or hindered.

ARTICLE FOURTH.—The State of New York shall have exclusive jurisdiction of and over the waters of the Kill Van Kull, between Staten Island and New Jersey, to the westernmost end of Shooter's Island, in respect to such quarantine laws and laws relating to passengers as now exist or may hereafter be passed under the authority of that State, and for executing the same; and the said State shall also have exclusive jurisdiction, for the like purposes, of and over the waters of the Sound, from the westernmost end of Shooter's island to Woodbridge creek, as to all vessels bound to any port in the said State of New York.

ARTICLE FIFTH.—The State of New Jersey shall have and enjoy exclusive jurisdiction of and over all the waters of the Sound between Staten Island and New Jersey lying south of Woodbridge creek, and of and over all the waters of Raritan bay, lying westward of a line drawn from the light house at Prince's bay to the mouth of Mattavan creek, subject to the following rights of property and of jurisdiction of the State of New York.

1. The State of New York shall have the exclusive right of property in and to the land under water, lying between the middle of the said waters and Staten Island.

2. The State of New York shall have the exclusive jurisdiction of and over the wharves, docks and improvements made and to be made, on the shore of Staten Island; and of and over all vessels aground on said shore, or fastened to any such wharf or dock, except that the said vessel shall be subject to the quarantine or health laws, and laws in relation to passengers of the State of New Jersey which now exist, or which may hereafter be passed.

3. The State of New York shall have the exclusive right of regulating the fisheries between the shore of Staten Island and the middle of the said waters, provided that the navigation of the said waters be not obstructed or hindered.

ARTICLE SIXTH.—Criminal process issued under the authority of the State of New Jersey, against any person accused of an offence committed within that State; or committed on board of any vessel being under the exclusive jurisdiction of that State as aforesaid; or committed against the regulations made or to be made by that State, in relation to the fisheries mentioned in the third article; and also civil process issued under the authority of the State of New Jersey against any person domiciled in that State, or against property taken out of that State to evade the laws thereof; may be served upon any of the said waters within the exclusive jurisdiction of the State of New York, unless such person or property shall be on board a vessel aground upon, or fastened to the shore of the State of New York, or fastened to a wharf adjoining thereto; or unless such person shall be under arrest, or such property shall be under seizure, by virtue of process or authority of the State of New York.

ARTICLE SEVENTH.—Criminal process issued under the authority of the State of New York, against any person accused of an offence committed within that State; or committed on board of any vessel being under the exclusive jurisdiction of that State as aforesaid; or committed against the regulations made or to be made by that State, in relation to the fisheries mentioned in the fifth article; and also civil process issued under the authority of the State of New York, against any person domiciled in that State, or against property taken out of that State to evade the laws thereof; may be served upon any of the said waters within the exclusive jurisdiction of the State of New Jersey, unless such person or property shall be on board a vessel aground upon, or fastened to the shore of the State of New Jersey, or fastened to a wharf adjoining thereto; or unless such person shall be under arrest, or such property shall be under seizure, by virtue of process or authority of the State of New Jersey.

ARTICLE EIGHTH.—This agreement shall become binding on the two States when confirmed by the Legislatures thereof respectively, and when approved by the Congress of the United States.

Done in four parts (two of which are retained by the Commissioners of New York to be delivered to the Governor of that State, and the other two of which are retained by the Commissioners of New Jersey, to be delivered to the Governor of that State,) at the city of New York, this sixteenth day of September, in the year of our Lord one thousand eight hundred and thirty-three, and of the Independence of the United States the fifty-eighth. (Signed.)

B. F. BUTLER, THEO. FRELINGHUYSEN,
PETER AUGUSTUS JAY, JAMES PARKER,
HENRY SEYMOUR, LUCIUS Q. C. ELMER.

IN ASSEMBLY.—Friday, Jan. 10.

Bill introduced on notice.

By Mr. Myers, for the better security of steamboat passengers—referred to a select committee, and double the usual number of copies ordered. The bill provides that three steamboat inspectors shall be appointed for two years by the Governor and Senate for each of the cities of New York and Albany; whose duty it shall be to direct the peculiar construction of steam boats intended to navigate the Hudson, so as most effectually to guard against the bursting of boilers—to inspect all such boilers previous to their being placed on board—to examine as to the competency of the engineers now, or hereafter to be employed—to ascertain once every two months, during the season, the condition of the boilers and machinery of every boat, and examine minutely into the causes of every explosion:—Also, that no boat shall be permitted to carry passengers on the Hudson, without having been examined by two inspectors (any one of whom may prohibit the conveyance of passengers by any boat which he may judge to be defective in boilers or machinery,) nor unless the engineer shall have submitted to an examination and received a certificate of qualification. Penalty for navigating the Hudson without obtaining the certificate of the two inspectors, \$500 for each offence; and for employing an engineer who has not complied with the requisitions of the act, \$50 for each day he may be so employed. Fees of commissioners \$5 each per diem while on duty; to be paid by the person employing; and \$5 for each engineer's certificate. Each boat is to be reported by the captain, and registered, for which he shall pay \$2 50. Tow boats not included in the act. Racing prohibited on penalty of forfeiture of boat, machinery, &c.

LATEST FROM BUENOS AYRES.—We have been favored by a friend with the perusal of a letter from a gentleman in Buenos Ayres, to his friend in this city, dated the 8th of November, from which we learn that the insurrection, of which our last previous accounts made mention, is at an end, and tranquillity restored.

It appears that popular discontent rose so high that vast numbers of citizens abandoned Buenos Ayres, and repaired to the outside party, which soon amounted to 7000 men, well armed, whilst the government had only about 500 men, very badly mounted. In this state of things Gov. Balcarce addressed a note to the legislature, soliciting their advice. They returned an answer somewhat equivocal, but containing an oblique hint to resign. He rejoined, and said "he was resolved to abide by their advice, and even to resign, if their honorable body thought it advisable."

Without waiting for further formality, the Legislature immediately voted to consider his suggestion as a resignation—and addressed another note to his Excellency, acquainting him that they had accepted his resignation! They next proceeded without loss of time to elect a new Governor, when General Viamont received 17 votes, and General Pinto, the Speaker of the House, 12. The former being declared elected, was ordered to appear before the House immediately, to make the usual oath, which he did at once, and entered upon the active duties of his office. Having taken possession of the fort, he despatched a communication to General Piendo, the head of the insurgents, informing him of the state of things in the city, and received for reply that the armed citizens without the walls rejoiced at the election of General Viamont, and would cheerfully yield obedience to any commands that he might issue.

The next day about one hundred officers of Balcarce's party went off to the schooner of war Sarandi, and having made Capt. Wilder prisoner, got her under way and decamped. The Captain wrote back to the Captain of the port, stating that he was a prisoner, and that the officers required him to land them at Colonia—on the Banda Oriental. It was expected that the vessel would be returned. On the 7th of Nov. about five thousand of the outside troops entered the city and marched to the Plaza de la Victoria, where they saluted the new Governor, and after making a grand display those of them who were soldiers repaired to their respective quarters, and the citizens to their houses and avocations. "Our present Governor, says the letter, is an old patriot, universally beloved, and one who, though firm, is inclined to peace. The selection which he has made for his ministry cannot be better—Garcia for finances and government, and Gen. Guide for War and Foreign Affairs. Gen. Mancilla, Chief of Police, Gen. Pinedo, Inspector General, and Col. Espora, Captain of the Port. Thus has ended the most systematic and orderly revolution which has ever taken place. I call it a revolution because a legitimate government has been compelled to abdicate by the torrent of public opinion, and we are now likely to enjoy the sweets of peace for some years to come."—[Com. Adv.]

The idea of the annexed dialogue, which is of course supposititious, is clever—and it is cleverly carried out:

DIALOGUE BETWEEN CAPTAIN ROSS AND CAPTAIN HUMPHREYS.

[From the Leeds Mercury.]

Capt. R.—I have been thinking, Humphreys, what Lord Melville, and Croker, and my old enemy, Barrow, will say to my discoveries. I have prepared despatches for the Admiralty at least ten times, sealed them firmly, and enclosed them in a wooden box, in the hope that they might be found if I perished.

Capt. H.—Lord Melville and Croker are out long since. Sir James Graham is First Lord now.

Capt. R.—What, Sir James Graham? Of course it is not the radical member from Cumberland, who makes the motions about sinecures.

Capt. H.—The very same, and as stingy in office as he was snarling out. Even the King, though so fond of the service, can't stop his pruning and lopping.

Capt. R.—The King! why I thought he preferred the army, and neglected the navy.

Capt. H.—Ah! I forgot to tell you. Old George has gone. We've now William IV. The Duke of Clarence that was.

Capt. R.—Indeed! What sort of a King does he make? Is he a strict disciplinarian? I hope he has not infringed on the liberties of the people, nor ordered Brougham and Denham, who abused him so at the Queen's trial, to be strung up at the yard-arm.

Why, what a horrible renegade Sir James Graham must be! I wonder the Duke would take him in.

Capt. H.—The Duke! Brougham! and Denham! renegade! strict disciplinarian! Ah! my good fellow, you are a thousand leagues out of your reckoning: we've changed the poles of the earth since you left us.

Capt. R.—I hope you've not had a revolution?

Capt. H.—Oh no, but we've had Reform.

Capt. R.—What! Has Lord John Russell carried his motion to give members to Manchester, Leeds, and Birmingham? Did the Duke and Peel consent?

Capt. H.—The Duke has been turned to the right about three years since. Earl Grey and the Whigs are now in office.

Capt. R.—Is it possible! Grey is a fine fellow, but rather proud of his order. However you say reform is carried. How do Grey and the boroughmongers go on together?

Capt. H.—Just as the dog Billy and the hundred rats did. He has worried them every one—there is no such thing as a boroughmonger in the Kingdom—they have all gone to Davy's locker.

Capt. R.—You make game of me. Why, what has become of the Tory majorities of Parliament?

Capt. H.—Reduced to a miserable minority in the Commons, and kept in decent order in the Lords.—All the large towns have representatives. The rotten boroughs are annihilated. The King turned Reform, and then it was up with the Tories.—The Reformed Parliament has emancipated the West India slaves, opened the China trade, and reformed the Irish Church.

Capt. R.—You tell me miracles. Pray have the Whigs found out a way to pay off the National Debt?

Capt. H.—No, that and the North West Passage will be discovered together.

Capt. R.—But tell me, has the King forgiven Brougham and Denham?

Capt. H.—Judge for yourself, the first is a Lord, and keeps the King's conscience; the second is Lord Chief Justice of the King's Bench.

Capt. R.—Good Humphreys! tell me next, do people walk on their hands or their feet now in England?

Capt. H.—The fashion had not changed in that respect when I sailed; but what think you of their travelling at the rate of thirty knots an hour—a hundred people or so drawn by one engine!

Capt. R.—Now, Humphreys, don't bounce; no tricks upon travellers; you, at home, are turning Munchausens now.

Capt. H.—As I live, its true; the Duke of Orleans went the other day from Liverpool to Manchester in an hour and five minutes.

Capt. R.—The Duke of Orleans! I hope the French have not invaded us; yet old Charles X. must have hated the English Reform.

Capt. H.—To be sure he did; he was running as fast as possible the other way, that is, towards pure despotism; so the French capsize him, and put his cousin the Duke of Orleans at the helm. They call him Louis Philip, and he makes a moderately good King, and keeps the French quiet, though the Liber-

als say he does not go far enough. His daughter married Leopold.

Capt. R.—Prince Leopold, you mean; do they live in England then?

Capt. H.—Prince Leopold! No, lack-a-day, one has to teach you the whole alphabet over again. King Leopold—King of Belgium; that is a new kingdom sprung up, separated from Holland; the Belgians did not like playing second fiddle to the Dutchman, so they mutinied, and chose a captain of their own, and they've got our Prince Leopold.

Capt. R.—And what said the Holy Alliance to that?

Capt. H.—Said! Why, Nic was beginning to be saucy, and talked of sending an army to France; but the Poles revolted, and it took a twelvemonth to lick them; they fought like lions, but what signified that when they were surrounded by such a set of devils? At last Nic got them down, and then he cut their throats. As to Austria and Prussia, they did not like the look of things, as the Frenchmen were clearing for action, and calling all hands on deck. So they thought it better to sheer off.

Capt. R.—You take away my breath. I can't receive all this at once, and I fear you're bouncing, Humphreys, or else the world has turned topsyturvy, whilst I have been locked up in ice these four years, almost as fast as a block of freestone. I thought if any body had climbed to the top of the tree in England, it would have been Huskisson.

Capt. H.—Poor Huskisson! he's gone; he was run down by an engine at the opening of the Liverpool railway, and killed.

Capt. R.—Horrible! I am almost afraid to ask who is alive. But tell me, how is my old neighbor —, and his daughter; a pretty little girl just left school.

Capt. H.—Little girl! She is Mrs. —, and has a fine boy a year old.

Capt. R.—You don't say so: the chit! Well, I see the world's going on the old principle still; but every thing seems to be done quicker in England than it used to be. What is Walter Scott's last tale?

Capt. H.—Ah! He has told his last; we have got to the Finis: the bright star has set. But I have news for you—the course of the Niger has been discovered.

Capt. R.—Who is the lucky man?

Capt. H.—Two young chaps called Lander; one of them was the attendant of poor Clapperton.—They are well behaved, steady lads, and they have done what so many fine fellows perished in attempting. They have traced the river to the Bight of Benin. One of them has gone out again, and it will be well if the dysentery does not catch him this time.

Capt. R.—(Sighing) I was not born under so fortunate a star. But I have done what man could do, and suffered more than most. Even Barrow will confess that.

Capt. H.—Every body will confess it. Cheer up man, you have solved the problem one way at least: you could not find a passage where there was none. Four winters in the ice is what no man ever endured before. The world will give you every credit for bravery, perseverance, and skill, not to be outdone.

Capt. R.—Do you think so?

METEOROLOGICAL RECORD, KEPT IN THE CITY OF NEW-YORK,

From the 10th to the 31st of December, 1833, inclusive.

[Communicated for the American Railroad Journal and Advocate of Internal Improvements.]

Date.	Hours.	Thermom.	Baromet.	Winds.	Strength of Wind.	Clouds from what direction.	Weather.
Dec. 10.	6 a.m.	36	30.00	sw by w	fresh	{ wsw } wsw	fair
	10	40	30.01	wsw—wnw	..	{ wsw } wsw	cloudy from wnw
	2 p.m.	40	30.02	wnw—nw	stormy	wnw	..
	6	39	30.10	nw	fresh	..	..
	10	38	30.15	..	..	..	..
" 11.	6 a.m.	36	30.16	nnw	..	{ w by s } nw	fair
	10	38	30.18	..	moderate	{ w by s } nnw	..
	2 p.m.	41	30.11	..	..	{ w by s } w by s	—haze bank at w
	6	37	30.13	..	..	..	hazy
	10	34	30.14	..	..	..	—fair
" 12.	6 a.m.	26	30.30	n by w	..	wsw	fair
	10	28	30.23	..	..	..	..
	2 p.m.	32	30.20	nnw	..	..	clear
	6	31	30.24	..	..	..	..
	10	26	30.29	..	..	..	..
" 13.	6 a.m.	22	30.34	..	light	..	..
	10	26	30.35	..	..	..	..
	2 p.m.	32	30.29	NE—SE	faint	..	..
	6	30	30.30	NE	..	..	..
	10	26	30.31	..	..	..	..
" 14.	6 a.m.	22	30.28	..	mod.—fresh	{ w by s } NE	cloudy
	10	23	30.28	NE by E	fresh	{ w by s } NE by E	..
	2 p.m.	27	30.14	ESE	strong—gale	ESE	..
	6	31	30.05	..	gale	..	—snowy
	10	31	29.93	..	—strong	..	—snowy

CITY OF NEW-YORK—CONTINUED.

Date.	Hours.	Ther-mometr.	Barome-ter.	Winds.	Strength of Wind.	Clouds from what direction.	Weather.
Dec. 15..	6 a. m.	30	29.88	N by E	strong	..	snow
	10	29	29.93	N	fresh	..	..
	2 p. m.	31	29.99	..	..	N	cloudy
" 16..	6	30	30.09	N by W	moderate	NNW	..
	10	29	30.15	..	..	..	hazy
	6 a. m.	27	30.25	NNE	..	ENE	cloudy
" 17..	10	30	30.27	NE—ENE	..	..	..
	2 p. m.	35	30.24	ENE	fresh	..	..
	6	34	30.20	..	strong-gale	..	..
" 18..	10	34	30.13	..	..	..	..
	6 a. m.	39	29.72	..	..	..	rainy
	10	40	29.63	..—E	heavy gale†	..	rain
" 19..	2 p. m.	43	29.50	NE by E	..—mod.	..	..
	6	42	29.57	..	..	..	cloudy
	10	39	29.60	..	..	..	..
" 20..	6 a. m.	39	29.63	..	..	..	cloudy
	10	40	29.67	..	..	NW	..
	2 p. m.	41	29.72	NNE	fresh	..	..
" 21..	6	37	29.80	..	..	..	..
	10	35	29.91	..	..	..	..
	6 a. m.	32	30.00	N by E	moderate	NNE	fair
" 22..	10	34	30.18	NNE	..	..	..
	2 p. m.	36	30.19	N by E	..	N by E	..
	6	32	30.24	..	..	..	clear
" 23..	10	29	30.27	..	..	..	..
	6 a. m.	24	30.31	N by W	..	..	..
	10	27	30.36	N	..	..	..
" 24..	2 p. m.	32	30.30	..	..	..	..
	6	31	30.30	..	calm	..	..
	10	27	30.32	..	..	..	..
" 25..	6 a. m.	25	30.28	N by E	light	WSW	fair
	10	29	30.30	..	..	..	..
	2 p. m.	36	30.25	SW—WNW	faint	..	..
" 26..	6	34	30.23	s westerly	..	..	cloudy
	10	34	30.20	..	..	..	rain—moon visible at times
	6 a. m.	34	30.10	..	..	..	fair
" 27..	10	36	30.12	NNW	moderate	..—WNW	..
	2 p. m.	40	30.11	NW	..	WNW	..
	6	37	30.20	..	..	..	clear
" 28..	10	35	30.23	..	calm	..	..
	6 a. m.	34	30.25	NNE	faint	w by s	fair
	10	36	30.28	..	..	..	cloudy
" 29..	2 p. m.	37	30.24	..	..	..	..
	6	36	30.20	..	..	..	rainy
	10	36	30.10	..	..	..	..
" 30..	6 a. m.	40	29.82	NE	strong	NE	..
	10	39	29.86	NNE—N	..—fresh	..	..
	2 p. m.	40	29.85	NNW	fresh	{ WSW } { NNW }	cloudy
" 31..	6	39	29.88	..	moderate	..	..
	10	39	29.88	..	..	..	..
	6 a. m.	38	29.78	..	calm	..	and foggy
" 32..	10	39	29.77	NE	moderate	..	rainy
	2 p. m.	40	29.60	NNE—N	..	..	rain
	6	38	29.63	NNW	..	..	..
" 33..	10	36	29.68	..	..	..	rainy
	6 a. m.	38	29.97	WNW	fresh	{ SW } { NNW }	fair
	10	41	30.03	..—w by s	..	..	..
" 34..	2 p. m.	39	30.10	w by N	..	w by N	..
	6	35	30.11	w by s—WSW	..	..	clear
	10	34	30.11	WSW	..	..	..
" 35..	6 a. m.	32	30.10	w by N	..	..	fair
	10	33	30.11	WNW—w by N	..	..	..
	2 p. m.	34	30.10	w by N	..	..	..
" 36..	6	31	30.09	..	..	WNW	..
	10	30	30.09	..	..	..	..
	6 a. m.	27	30.05	WSW	..	WSW	..
" 37..	10	31	30.10	..	..	{ WSW } { WSW }	..
	2 p. m.	33	30.08	w by s	..	w by s	cloudy
	6	33	30.04	..	moderate	..	..
" 38..	10	33	30.06	..	..	..	..
	6 a. m.	35	30.14	..	..	w by N	fair and pleasant
	10	37	30.19	..—w by N	..	..	..
" 39..	2 p. m.	41	30.20	..—w by s	..	{ WSW } { N }	..
	6	36	30.27	WSW	light	..	..
	10	34	30.30	..	..	..	..
" 40..	6 a. m.	33	30.28	ENE	..	..	cloudy
	10	35	30.35	..	..	..	..
	2 p. m.	36	30.25	..	..	..	rainy
" 41..	6	39	30.21	..	faint	..	..
	10	41	30.17	..	..	..	..
	6 a. m.	39	30.02	NNE—N by E	..	..	cloudy and foggy
" 42..	10	41	30.04	N—NNW—w by s	..	WSW	..
	2 p. m.	43	29.96	WSW	moderate	..	fair
	6	42	29.93	..	..	..	..
" 43..	10	39	29.96	..	..	..	cloudy

In December, the observations of winds from the North-Eastern quarter, were 791—from the South-Eastern, 1—from the South-Western, 23—from the North-Western, 431.

The observations of the direction of clouds or higher currents, for the same month, were as follows: From the North-Eastern quarter, 28—from the South-Eastern, 1—from the South-Western, 534—from the North-Western, 251.

Maximum of the barometer 30.50 in.—Minimum, 29.50 in.—Range, 1. in.

* The snow storm of the 14th commenced at Baltimore at half past eleven on Saturday morning, and at Philadelphia at 4 o'clock in the afternoon, and continued about the same length of time as here.

† The storm of the 17th, as well as that of the preceding Saturday, commenced somewhat earlier at the south and later at the eastward than usual; or, in other words, the progress of these two storms from south-west towards the north-east was slower than the average of other storms. The storm of the 17th is said to have been near twenty-four hours in travelling from New-York to Portland.

The common notion that the violent westerly wind which commonly succeeds an easterly gale is an opposing or antagonist wind, forcing back the easterly gale, is disproved by the facts attending the gale of the 17th, which, in this part of the country, exhibited no change to the westward—the wind continuing to blow from the north-eastern quarter till long after the gale had passed beyond the eastern limits of the United States. Such facts can be satisfactorily accounted for only by admitting the circuitous or whirlwind character of these storms.

GRACIE, PRIME & CO. having this day taken into co-partnership JOHN CLARKSON JAY, will continue their business under the same firm.—New-York, 1st October, 1833.

FOR SALE.

ATLANTIC JOURNAL AND FRIEND OF KNOWLEDGE—A Quarterly Journal, by Professor Rafinesque, of Philadelphia, begun in the spring of 1832, with wood cuts, &c. dedicated to Historical and Natural Sciences, Botany, Agriculture, &c. at one dollar per annum.

MEDICAL FLORA OF THE UNITED STATES, in 2 vols. with 100 plates, containing also the economical properties of 300 genera of American plants, \$3.

MANUAL OF AMERICAN VINES, and Art of Making Wines, with 8 figures, 25 cents.

FISHES AND SHELLS OF THE RIVER OHIO, 1 dollar.

AMERICAN FLORIST, with 36 figures—price 36 cts.

** Orders for these works, or any other of Professor Rafinesque's, received at this office. A9 J M & F

TOWNSEND & DUFFEE, of Palmyra, Manufacturers of Railroad Rope, having removed their establishment to Hudson, under the name of Duffee, May & Co. offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J. B. Jervis, Eng. M. & H. R. R. Co., Albany; or James Archibald, Engineer Hudson and Delaware Canal and Railroad Company, Carbon-dale, Luzerne county, Pennsylvania.

Hudson, Columbia county, New-York, {
January 29, 1833. } F2 if

INCOMBUSTIBLE ARCHITECTURE.

INCOMBUSTIBLE dwelling-houses and buildings of all kinds devised or built in New-York, or any part of the United States, as cheap as any other combustible buildings. Actual buildings and houses rendered incombustible at a small additional expense.

SHIPS of all sorts, and Steamboats, rendered incombustible, and not liable to sink, at a small expense.

For sale, 10,000 lbs. of ANTIGNIS, or Incombustible Varnish, at one dollar per lb.

Apply to C. S. RAFINESQUE, Professor of Hist. and Nat. Sciences, Chemist, Architect, &c. in Philadelphia, No. 59 North 5th street. A pamphlet given gratis.

References in New-York.—Mr. Minor, Editor of the Mechanics' Magazine; Messrs. Rushton & Aspinwall, Druggists. Editors in the city or country, copying this advertisement, will receive a commission on any contract procured by their means. S1 R J M M & F

NOTICE TO MANUFACTURERS.

SIMON FAIRMAN, of the village of Lansingburgh, in the county of Rensselaer, and state of New-York, has invented and put in operation a Machine for making Wrought Nails with square points. This machine will make about sixty 6d nails, and about forty 10d nails in a minute, and in the same proportion larger sizes, even to spikes for ships. The nail is hammered and comes from the machine completely heated to redness, that its capacity for being clenched is good and sure. One horse power is sufficient to drive one machine, and may easily be applied where such power for driving machinery is in operation. Said Fairman will make, vend and warrant machines as above, to any persons who may apply for them as soon as they may be made, and on the most reasonable terms. He also desires to sell one half of his patent right for the use of said machines throughout the United States. Any person desiring further information, or to purchase, will please to call at the machine shop of Mr. John Humphrey, in the village of Lansingburgh.—August 18, 1833. A29 d RM & F

TO RAILROAD COMPANIES.

PROFESSOR RAFINESQUE, of Philadelphia, will undertake to build CARS that will carry along their own railway, and may be used on level M'Adam roads. They will save ten millions of money to be wasted on 1000 miles of iron railroads to be laid in the United States within a few years, and dispense with tracks and double tracks. These Cars may be drawn by horses or steam. He claims to have discovered them ever since 1825, by his caveats filed in the Patent Office. Apply, post paid. S1 R J M M & F

TO STEAMBOAT COMPANIES.

PROFESSOR RAFINESQUE, of Philadelphia, offers his services to render steamboats incombustible, and not liable to sink, even by the bursting of boilers, or striking against snags, sawyers and rocks. This will save many boats, much property, and the lives of hundreds every year. Those who neglect this easy improvement, deserve to be neglected and deserted by the public as un mindful of safety. Apply, post paid. S1 R J M M & F

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The subscriber having resumed the charge of the above establishment, is now enabled to furnish traders and others with FRESH GARDEN SEEDS, upon very favorable terms, and of the growth of 1833, warranted of the best quality.

The greatest care and attention has been bestowed upon the growing and saving of Seeds, and none will be sold at this establishment excepting those raised expressly for it, and by experienced seedsmen; and those kinds imported which cannot be raised to perfection in this country; these are from the best houses in Europe, and may be relied upon as genuine.

It is earnestly requested whenever there are any failures hereafter, they should be represented to the subscriber; not that it is possible to obviate unfavorable seasons and circumstances, but that satisfaction may be rendered and perfection approximated. Also—French Lucern, White Dutch Clover, White Mulberry Seed, genuine Mangel Wutzell, Yellow Locust, Ruta Baga, and Field Turnip Seeds, well worth the attention of Farmers.

W. THORBURN,
347 N. Market st. (opposite Post Office.)

Catalogues may be had at the Store; if sent for by mail, will be forwarded gratis. Orders solicited early, as the better justice can be done in the execution.

* Mr. Thorburn is also Agent for the following publications, to wit:—

NEW YORK FARMER and American Gardeners' Magazine. MECHANICS' MAGAZINE and Register of Inventions & Improvements.

AMERICAN RAILROAD JOURNAL and Advocate of Internal Improvements; and the

NEW-YORK AMERICAN, Daily, Tri-Weekly, and Semi-Weekly; either or all of which may be seen and obtained by those who wish them, by calling at 347 North Market street, Albany.

List of Subscribers who have paid in advance to the year 1835.

Ayres, John B., Jonesborough, Ala.
Ackley, Julius, Ithaca, N. Y.
Ackley, Henry, Ithaca, N. Y.
Akins, Jonathan, Pawlings, Dutchess co. N. Y.
Albers, J. H., New-York City.
Boyce, Lt., Philadelphia.
Bache, Major, Philadelphia.
Beebe, J. S., Ithaca, N. Y.
Berrian, Richard, New-York City.
Bliss, N., New-York City.
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Benner, Jacob, Bainbridge, Ross co., Ohio.
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Fleming, Augustus, New-York City.
Fraser, John, Richmond, Indiana.
Greenleaf, Moses, Williamsburgh, Main.
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Hagner, C. N., Baltimore, Md.
Hutchinson, H., Utica, N. Y.
High, Henry, Reading, Pa.
Hazard, Thomas, Baltimore, Md.
Higham, Robert, Little Falls, N. Y.
Harbottle & Young, Dresden, Yates co., N. Y.
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Phillip, Robert, Augusta, Geo.
Potter, Charles, Providence, R. I.
Reynolds, L. O., Savannah, Geo.
Rausch and Runyon, Lexington, Ky.
Rhodes, Wm., Richmond, Va.
Smith, J. L., New-York City.
Smith, R. S., Suffolk, Va.
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Shoemaker, J. L., New-York City.
Sammons, W. T., Johnstown, N. Y.
Taylor, jr., W., New-York City.
Turner, Elisha, South Wrentham, Mass.
Vandegraaff, J. S., Lexington, Ky.
Van Northwick, John, Penyan, Yates co., N. Y.
Wight, J. F., Erie, Pa.
Wilstack, C. F., Cincinnati, Ohio.
Wing, Elihu, Quaker Hill, N. Y.
Woodward, W. A., Ithaca, N. Y.
Willard, W. T., New-York City.
Williams, John R., ditto.
Yates & McIntyre, ditto.

AN INTERESTING AND USEFUL MAP.

A friend of ours has now in a state of forwardness, a Map upon which will be delineated nearly all the Railroads now chartered in the U. States. It is designed to show the present contemplated connexion of the different lines, as well as where others may hereafter be constructed to connect with them. It will be completed in a few weeks, and may be had either in sheets, or put up in morocco for pocket maps, in any quantity, by applying to the subscriber.
D. K. MINOR, 35 Wall street.
New-York, August 14, 1833.

NOVELTY WORKS,

Near Dry Dock, New-York.

THOMAS B. STILLMAN, Manufacturer of Steam Engines, Boilers, Railroad and Mill Work, Lathes, Presses, and other Machinery. Also, Dr. Nott's Patent Tubular Boilers, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited.

AGRICULTURAL WAREHOUSE AND SEED STORE.

No. 81 Barclay street.

H. HUXLEY & CO., Produce Brokers, offer their services in selling and buying all kinds of Country Produce, and Farming and Gardening Implements.

STEPHENSON,

Builder of a superior style of Passenger Cars for Railroads
No. 264 Elizabeth street, near Bloecker street,
New-York.

RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part of the New-York and Harlem Railroad, now in operation.
J 15 15

LOCOMOTIVE ENGINES.

THE AMERICAN STEAM CARRIAGE COMPANY, OF PHILADELPHIA, respectfully inform the public, and especially Railroad and Transportation Companies, that they have become sole proprietors of certain improvements in the construction of Locomotive Engines, and other railway carriages, secured to Col. Stephen H. Long, of the United States Engineers, by letters patent from the United States, and that they are prepared to execute any orders for the construction of Locomotive Engines, Tenders, &c. with which they may be favored, and pledge themselves to a punctual compliance with any engagements they may make in reference to this line of business.

They have already in their possession the requisite apparatus for the construction of three classes of engines, viz. engines weighing four, five, and six tons.

The engines made by them will be warranted to travel at the following rates of speed, viz. a six ton engine at a speed of 15 miles per hour; a five ton engine at a speed of 18 miles per hour; a four ton engine at a speed of 22 1/2 miles per hour. Their performance in other respects will be warranted to equal that of the best English engines of the same class, with respect not only to their efficiency in the conveyance of burthens, but to their durability, and the cheapness and facility of their repairs.

The engines will be adapted to the use of anthracite coal, pine wood, cake, or any other fuel hitherto used in locomotive engines.

The terms shall be quite as favorable, and even more moderate, than those on which engines of the same class can be procured from abroad.

All orders for engines, &c. and other communications in reference to the subject, will be addressed to the subscriber, in the city of Philadelphia, and shall receive prompt attention.

By order of the Company. WILLIAM NORRIS, Secretary.

December 2d, 1833.

For further information on this subject see No. 49, page 72 of this Journal.

SURVEYORS' INSTRUMENTS.

Compasses of various sizes and of superior quality, warranted.

Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by
E. & G. W. BLUNT, 154 Water street, corner of Maidenlane.
J 31 81

ENGINEERING AND SURVEYING INSTRUMENTS.

The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely new: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy—also, a Railroad Goniometer, with two Telescopes—and a Leveling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.

WM. J. YOUNG,
Mathematical Instrument Maker, No. 9 Dock street, Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested:—

In reply to thy inquiries respecting the instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad, I cheerfully furnish thee with the following information: The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable.

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sights, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to later angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying off rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,

JAMES P. STABLER, Superintendent of Construction of Baltimore and Ohio Railroad.
Philadelphia, February, 1833.

Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as much most cheerfully recommend it to Engineers and Surveyors.
E. H. GILL, Civil Engineer.

German town, February, 1833.
For a year past I have used Instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these Instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY R. CAMPBELL, Eng. Philad.,
German and Norman Railroad.

RAILWAY IRON.

				Flat Bars in lengths of 14 to 16 feet, counter sunk holes, ended at an angle of 45 degrees with splicing plates, nails to suit.
Ninety-five tons of 1 inch by 1/2 inch,	300	do.	1 1/2 do.	do.
40	do.	1 1/2 do.	do.	do.
800	do.	2 do.	do.	do.
800	do.	2 1/2 do.	do.	do.
soon expected.				

250 do. of Edge Rails of 36 lbs. per yard, with the requisite chairs, keys and pins.

The above will be sold free of duty, to State Governments, and Incorporated Governments, and the Drawback taken in part payment.
A. & G. RALSTON.

9 South Front street, Philadelphia.

Models and samples of all the different kinds of Rails, Chairs, Pins, Wedges, Spikes, and Splicing Plates, in use, both in this country and Great Britain, will be exhibited to those disposed to examine them.
G78 meowr

RAILROAD CAR WHEELS AND BOXES, AND OTHER RAILROAD CASTINGS.

Also, AXLES furnished and flued to wheels complete at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to. Also, CAR SPRINGS.

Also, Flange Tires turned complete.

J8 ROGERS, KETCHUM & GROSVENOR.



INSTRUMENTS.

SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

EWING & HEARTTE, at the sign of the Quadrant, No. 53 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude. For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewing & Heartte.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable. They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES P. STABLER,

Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' Instruments of your Manufacture, particularly Spirit Levels, and Surveyors' Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

WILLIAM HOWARD, U. S. Civil Engineer.

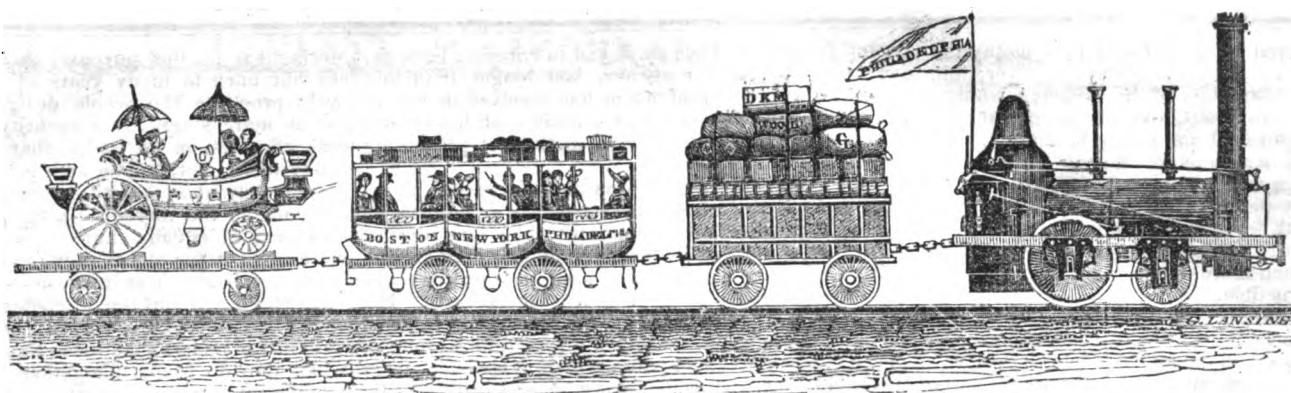
Baltimore, May 1st, 1833.

To Messrs Ewing and Heartte.—As you have asked me to give my opinion of the merits of those Instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming acquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprise so well merits, I remain, yours, &c.

B. H. LATROBE,

Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them upon application, to any persons desirous of perusing the same.



AMERICAN RAILROAD JOURNAL, AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT No. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, EDITOR.]

SATURDAY, JANUARY 25, 1834.

[VOLUME III.—No. 3.]

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, JANUARY 25, 1834.

SAFETY APPARATUS FOR STEAM BOILERS.—

An apology is due to several of our esteemed correspondents for the delay which has occurred in the publication of their communications. That of Lieut. A. C. Twining and of J. S. Williams, Esq. of Cincinnati, Ohio, were received a long time since, but have been delayed by my absence and a desire of giving another communication upon the same subject, in the same number of the Journal. It is not, however, in readiness, and we will not longer delay those which have been so long in hand.

The communication of Mr. J. N. Pomeroy, describing a new mode of constructing vessels, has also been some time in hand. It is, indeed, as he observes, "as a water craft entirely unique," and as such, we submit it to the observation of the public.

At a meeting of the Stockholders of the LAKE ERIE AND MAD RIVER RAILROAD COMPANY, held, as we are informed, at Urbana, January 9th, 1834, it being ascertained that more than five thousand shares had been subscribed, they proceeded to the election of officers, when the following gentlemen were duly appointed :

President—Joseph Vance.

Directors—Horatio G. Phillips, Pierson Spining, John C. Pearson, Benjamin M. Platt, William Townsend, Charles G. Swain, Jonathan Harshman, Charles Cavileer, John H. James, Josiah Hedges, James Hollister, and John G. Camp.

Treasurer—John H. James, of Urbana.

Secretary—Jeremiah Warder, Springfield.

Committees were appointed to take such other measures as they may deem proper to cause the subscriptions of stock to be filled, to employ a competent engineer for the final location of the road, to commence on the first day of May, and so soon as 800,000 dollars shall be taken, the work is to be put under contract, from Day-ton to Urbana, and from Portland to a point 40 miles south, and beyond Tiffin.

MR. BURDEN'S STEAMBOATS.—It is said that a company of gentlemen in Albany have purchased of Mr. Burden the exclusive right to use steamboats made after his model, for the conveyance of passengers upon the Hudson river. Mr. B. reserves to himself the privilege of using his boats on the Hudson for freighting and towing.

However great may be the improvement which Mr. Burden had made in the construction of boats to be propelled by steam, we think further progress in the art will yet be exhibited. Mr. Langdon, of West Troy, has already a model of a boat prepared, which promises fair to outstrip Mr. Burden's. While it combines all the requisites which B.'s plan furnishes for obviating the resistance of fluid through which it passes, it also possesses the additional advantage of a greater buoyancy. It may also be constructed at a less expense, and does not appear so likely to get out of repair. We shall not be surprized to see it rank before Mr. Burden's, both as to speed and safety.—[Troy Budget.]

The following extract is taken from a London paper :—

Application is intended to be made in the ensuing session for a bill "to authorize in the constructing, improving, and using ten feet in width of the carriage way, or waste ground on the side of the carriage way, of the turnpike roads from Islington, in the county of Middlesex, to the town of Birmingham (being part of the several roads constituting the Holyhead mail-coach road between those places) into a hard and solid road, for the passing or travelling thereon of locomotive steam carriages;" comprising also powers to levy and collect tolls upon such carriages, and to apportion them between the trustees or proprietors of the said roads, and the persons who shall be authorized to construct such intended steam carriage road, and to alter and increase the tolls, rates, &c. authorized by the various acts at present in force.

RAILROAD, GERMANY.—The subscription for the intended railroad between Nuremberg and Furth amounts already to 130,000 florins.

Our "highly esteemed correspondent," the writer of the following extract and communication, need not be at all apprehensive that his communications will be omitted "agreeably to the law (of editors) in such cases made and provided" in consequence of a "press of other matter"—especially if they should have the same, hereafter, to recommend them as those already received: they will always find a place in the Journal. We cannot, however, forbear to publish the following extract from his letter by way of showing his philosophy, and at the same time recommending it to those who may have occasion to exercise it.

"I am sorry that I could not have furnished you with an article less prolix, and more worthy of the Journal; but you need not hesitate at declining to use it. You have only, "agreeably to the law (of editors) in such case made and provided," to express your "profound regret, that the press of other matter, &c. &c. obliges you to omit the publication of the communication of your highly esteemed correspondent, &c. &c. &c.—and this, you know, applies the anodyne to all wounds of this kind."

On the Petrifying of Wood, as applicable to Timber for Railroads, &c. By G. [For the American Railroad Journal and Advocate of Internal Improvements.]

Some time since, in an eastern paper, there appeared an article stating that some person had discovered a method of completely petrifying wood, and so preserving it nearly, or quite indestructible, by saturation with HYDRATE OF LIME. If any of your correspondents can furnish any information of the process; or any facts which may elucidate the subject, perhaps they might render an important service to the cause of railroads, in situations which require or admit the use of wood; and I would respectfully suggest to any who may recollect such facts, that the communication of them to the Railroad Journal would be a gratification to at least one of its readers—probably to many.

It is said that timber imbedded in lime, under certain circumstances, as, for instance, the ends of beams inserted in the walls of brick houses, decays sooner than in the open air—becomes dry rotten, &c. I have heard it argued that this is owing to the causticity, or some other quality of the lime; and to prevent the effect, it has been a practice, in some cases, to leave a space for the ends of the beams, large enough for the free circulation of air around them, and free from contact with the lime used in the construction of the walls. Whether the facts ob-

served in these cases fully justify the conclusion that time is always, or ever, injurious to the durability of the timber, I would not venture to assert, and it is not my purpose now to inquire. I am willing to admit the conclusion that it *may* be so in some cases; but I would suggest the inquiry whether its causticity may not be so completely destroyed by saturation with water, and in this state whether wood may not be so far impregnated with it as to become much more durable, and perhaps next to indestructible.

The notice mentioned at the introduction of this article, if it may be relied on as fact, answers the inquiry in the affirmative. Of the fact, however, I am ignorant, and therefore it is that I make this communication and inquiry. My object is to excite others to further investigations, and with this end in view, I beg leave to state some facts of which I have been informed, which seem to me to prove sufficiently, that lime may, in some situations, be made to contribute very essentially to the durability of wood; and, perhaps, may suggest a remedy, to some important extent, for the disadvantages to which wooden railroads are obviously liable.

Some years ago, I was travelling on the sea-coast of Maine, and put up for a night at the house of an elderly gentleman, who had been all his days concerned in ship-building and navigation, and appeared to be a sensible, shrewd observer. He had, that day, a new vessel arrived from her first voyage to a foreign port, and among other circumstances was told that she had not leaked a *drop* during the voyage. This led me to remark that she must have been exceedingly well built. He replied that he thought the tightness of the vessel was owing, in a measure, to the *lime* with which she had been stuffed while building. He had been led to believe that lime was a better preservative of the timber of ships than salt, or any other substance heretofore used for that purpose. While this vessel was being built, and before ceiling up the inside, he had the interstices of the timbers filled with new stone lime, pounded fine enough to be driven in between the timbers, and rammed in as solid as was possible in that state; the planking was then finished, and the lime left to slake and fill the remaining interstices. His theory was, that the air, and the moisture of the wood, and perhaps a little water, which might be expected to leak into the best built vessel, would slake the lime so that its expansion would fill every chink in the timbers, and penetrate the pores of the wood itself, sufficiently to prevent speedy decay; but any effect in rendering the vessel more staunch he had not anticipated. He, however, concluded that the expansion of the lime, though, from its small quantity, not sufficient to injure the vessel by its mechanical force, yet had been sufficient, by the addition of the little water which had leaked in, to form a mass of mortar so solid as to prevent, at least in some degree, the further ingress of water from without. This, however, was a new idea, and the present experiment was not conclusive; but as to its effect in preserving the timber, he had no doubt; and he related several facts in his own knowledge in support of this opinion.

As one instance, he stated that he had once owned a coasting vessel, built of the common timber of the coast of Maine, which, when nearly new, was once bound from Thomaston to Boston, with a cargo of lime, and on her passage went ashore somewhere between Cape Ann and Boston, and bilged. The lime slaked, burnt the deck and upper works, and, as might be expected, penetrated the timbers throughout. The vessel was unloaded, repaired, and lived, I think he said, thirty or forty years after this event; had undergone occasional repairs since, but the principal part of the original timber remained. When, after that time, examined, it was found that the original timbers, which had been impregnated with the lime, were *perfectly sound*, while those which had been added *since* that time, were all, or nearly all, *rotten*. He adduced, also, the

fact that vessels employed in carrying lime, generally, if not always, last longer than any others; and said that he had resolved thereafter to saturate, as far as possible, all his vessels with lime, as the best method of preserving them from decay.

Another instance was that of a parcel of pine planks which had been used as a platform, on the ground, on which to make lime mortar. This platform was laid by his grandfather, in a corner of the yard, and used more or less every year for the purpose of a "mortar bed." His father continued it in the same use; himself, the grandson, continued it for a time, as long as he had occasion; after which, it lay some years unused, and overgrown with grass and weeds; at length, wanting the ground for another purpose, he had it torn up and removed, expecting to find the planks entirely rotten—but, to his surprise, found them sound, and, to use his forcible expression, "as hard as a bull's horn." This was after they had lain in contact with the surface of the ground, exposed to all the vicissitudes of the atmosphere, I think he said, *about sixty years!*

It is now near 15 years since I received these accounts from the old gentleman, and I have never seen him since: my recollection, therefore, may not be perfectly accurate in the details of his statements, but of their *substance* I feel certain. When I saw the notice referred to in the beginning of this article, respecting the preservation of timber by means of hydrate of lime, these facts at once recurred forcibly to my mind, and I was led to the inference that, in the cases mentioned, there had been so much water present as to destroy the *caustic* properties of the lime, convert it to a *hydrate*, and hold so much of it in solution, and in such a situation, as that it might always be presented to the wood for its absorption, until it had become entirely saturated, and the wood thus effectually preserved.

Will some of your correspondents recollect, and furnish for publication in the Journal, such facts as may confirm or correct this inference, and trace out its legitimate consequences if confirmed? G.

Safety Apparatus for Steam Boilers. By ALEX. C. TWINING. To the Editor of the American Railroad Journal.

SIR,—I have read several interesting articles in your Railroad Journal, the object of which was to propose one plan and another for protecting steam boilers against that danger of explosion which arises from the exposure of the flues to a violent heat when the water is permitted to descend below them. Respecting this hazard, (which is of frequent occurrence, as any man may be satisfied who takes time and pains to make extensive inquiries, and concerning which I speak reflectively when I express the opinion that it subjects the traveller to more multiplied and more fearful risks than any other circumstance attending the steam engine,) there can scarcely be too much discussion, until some adequate means of public safety in relation to it shall have been discovered and brought into common use. In this article I design to add one more to the proposed expedients for safety, after bringing up to view one or two principles which are necessary to a clear understanding of the precise object before us, and which are often overlooked by those who discuss this subject.

It is a principle, or, at least, it is a truth, which ought to take the place of a principle, not to be lost sight of on this subject, that mechanism, ever so excellent, cannot be made to supersede the practice of that same strict and personal examination by means of the gauge-cocks, which is now enjoined upon the engineer and other attendants of the engine. The propriety of this assertion will be understood by every one who is practically acquainted with the imperfection of materials, and knows that machines, put together according to the best rules of art and maxims of science, are subject, nevertheless, to irregularities, which, in

mechanism for this purpose, though they occur but once in many years of time, do entirely prostrate the whole design. Nothing can be more simple, as a security against excess of steam in the boiler, than the present safety valve; yet, simple as it is, no one ventures to rely upon it without the attendant indications of the mercurial gauge; and if any arrangement equally simple shall ever be devised to meet the object now in question, as it is very probable there may, no wise man will rely upon it without the attendant indications of the gauge-cocks,—at least, until the construction of boilers shall make their explosions, when they do occur, altogether less destructive than they are at present. Indeed, if the vigilance and skill of those who are entrusted with the engine might be implicitly relied on, there would be little occasion for seeking any other safeguard: but *men* are scarcely less fallible than *mechanism*; and if the defects of this make it an uncertain dependence, the defects of the other ought, on the same principle, to teach us the necessity of providing a check against those causes of danger which do continually act,—such, for example, as deficient skill, or inattention, or drowsiness, or the use of spirituous liquors, or unforeseen accidental circumstances—causes that beset the passengers' way with dangers which a timely prevention generally disarms, but which sometimes give terrible demonstration that they are not imaginary. From such considerations we infer that no apparatus can do away with the necessity of that personal vigilance which is now the only dependence for safety—that the single end of an apparatus should be to provide a check upon those causes which make that first dependence sometimes to fail, and that such an apparatus is really most necessary, notwithstanding the opinions of many practical men to the contrary.

But, in forming such an apparatus, it should be a principle to make its indications of such a kind as to give the early notice of impending danger, not to passengers, but to those attendants on the engine whose business it shall be to apply the remedy. An opposite idea, it is true, has been incorporated into most of the current devices, for sounding or ringing alarms, or regulating moveable indices, open to the sense of all who may wish to gauge, at any moment, the precise dimensions of their travelling security. Not that bells or an index might not be so arranged as to give timely notice in the proper quarter only; but those projectors who have contemplated arrangements for indiscriminate alarm, have taken measures to defeat the success of their own projects, since experience has shown that the excitement and headlong impulses of a mass of people, acted on by the impression of impending danger, are almost as much to be dreaded as any common danger itself; and it is from their experience of this tendency, as well as from motives of immediate interest, and pride of personal feeling, that captains and proprietors would naturally discountenance every plan which would proclaim indiscriminately each momentary danger. The thing to be aimed at is to give notice when danger is at hand to those who have the means of averting it, and not at once to others; for, although it were ever thought a doubtful question whether passengers ought not at once to know the crisis, yet it is not a doubtful question whether captains and proprietors will readily consent that they shall; and still less is it doubtful respecting any specific means of safety, whether it will come into general use without the favor of those authorities.

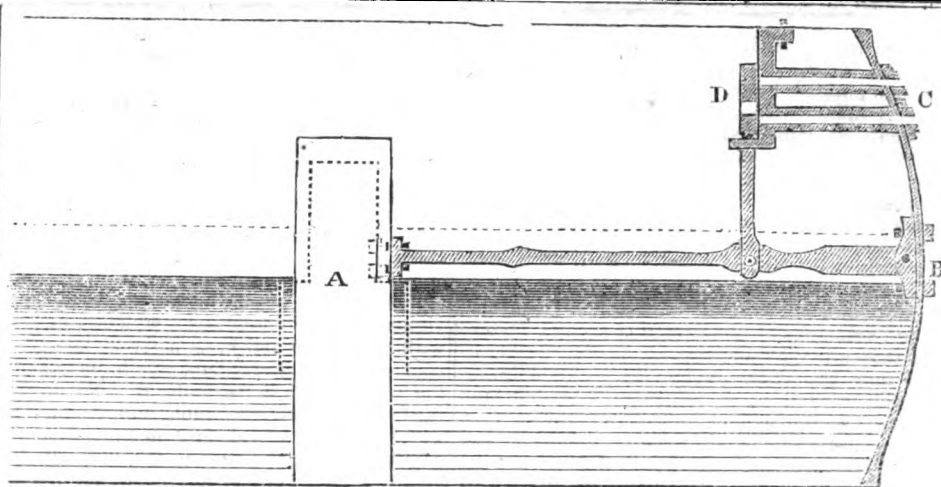
These considerations, with others, led the writer many months ago to suggest to two or three individuals, of great skill in the steam engine, an arrangement for causing a small puff of steam to issue and alarm the engineer and firemen, in case the water should fall too low, while by others it would be undistinguished from the common sounds that now issue from the boilers, unless, indeed, the evil were permitted to continue uncorrected, in which case the

increasing alarm would give indiscriminate notice of neglect and hazard. Since the time when those communications were made, an interesting article has found insertion in your Journal respecting a safety apparatus invented by Mr. Kennedy, of New-York, which, if I understand it rightly, embraces in its plan substantially the same idea. Mr. Kennedy, therefore, if that method of alarm shall be found to possess advantages sufficient to bring it into use, will be entitled to the merit of having first brought the idea up to public notice; though his particular arrangement, there is reason to fear, would fail of success, from a circumstance which deserves to be pointed out more specifically.

The circumstance alluded to, (and which, indeed, is common to most other plans that have been proposed for this object,) is that the rod, which connects Mr. Kennedy's float with his escape valves, is made to pass through the boiler in such a manner that this rod, or rather the "wadded stopper" which it works, is subject to the atmospheric pressure above, and the steam pressure beneath; but as the atmospheric pressure is subject to changes equivalent to two inches of mercury, and the steam pressure in the boiler to changes much greater, it may be seen at once that a stopper of no more than one inch in area would be subject to influences which would of themselves greatly impair the accuracy of the indications of any float of moderate size. Add to this the friction of the stopper, which by reason of its packing must adhere to the tube with a considerable force, and there will be found in these three disturbing forces reason to apprehend a very capricious action of the float.

In my own arrangement, as well as the preceding, there are valves and a rod; but the rod is to work wholly in the steam, and is to be connected with the float by the intervention of a lever, which gives a considerable mechanical advantage,—say, an advantage of three to one. At the same time, packing is made unnecessary by the adoption of a metallic plate, working upon another plate in the manner of the common slide valve; but this will be more fully understood when we shall come to the figure and explanation.

None of the plans in your Journal which I have noticed, except Mr. Kennedy's, have guarded against the uncertain amount of action in the float from its ebullition or foaming of the water. Mr. Kennedy has proposed a box, in which his float is to rise and sink; but I propose to accomplish the same object only by adapting the form of my float to that purpose, in the manner following: Suppose a float of the form and in the position of an upright cylinder, sunk just to touch the boiler at its lower end, or within an inappreciable distance of it, the water in which it floats being dead or free from ebullition; then when steam began to be generated, the water would swell in bulk and rise in height around the cylinder, but the upward pressure upon the cylinder's base would remain unvaried, since the specific gravity of the column above it is as much diminished as its height is augmented. The cylinder, therefore, would neither sink nor rise, but would retain its position unaltered until the absolute quantity of water in the boiler became itself altered. By adopting thus a cylindrical float, to sink in the dead water as near to the bottom as the requisite play of the float will admit, we may secure the necessary regularity of action. But, in case it should be inconvenient for the float to sink so deep, let us suppose the immersion to be only to a part of the water's depth—it may be one-third, or one-fourth—then, if the immersed cylinder suddenly break off in its shape to a less diameter at the water line, forming a smaller cylinder, resting immediately upon the larger, and united to it at the precise line of the water, and if the cross section of the smaller bear the same ratio, in area, to the cross section of the larger, that the immersion in dead water of the combined float bears to the average depth of dead water required in the boiler, such a float will be very nearly stationary



tionary when the water changes from its dead state to a state of violent ebullition, or foaming. By the principles of hydrostatics, it would be perfectly stationary if the density of the floating column of water in ebullition were alike from bottom to top; but this is not the case in reality, by reason of the bubbles of steam enlarging a little as they ascend, and the greater quantity of steam thrown up along the sides of the boiler, establishing a superficial current from the sides to the middle. The variation from equal density, however, in the middle, is not great, and it is in favor of the float's descending too low when the water foams: which is on the side of safety. One of the gentlemen to whom I had communicated, in conversation, the principles of this apparatus, objected to hollow floats; that he had often in the actual trial found them unaccountably to fill with water. This result was doubtless occasioned by minute imperfections in the metal and workmanship, which did not manifest themselves until the float became subject to the steam pressure in the boilers, and to the corrosive action of the water and gases. These imperfections it may not be easy wholly to avoid; and the objection led me to adopt, in my proposed arrangement, a float entirely open at the bottom, which would always be emptied of water by the ascending steam, and its buoyancy kept unimpaired so long as there is occasion for its action.

Before leaving this subject, I will remark upon one mechanical principle, which, if real, possesses the greatest practical importance. The nature of the danger which is to be dreaded, in the case of a deficient supply of water in the boiler, is very generally understood—that is, if the water line descends below the flues, they become intensely heated, and when the water, either by ebullition or by injection through the supply cock, again reaches the incandescent metal, an immense quantity of vapor is immediately generated, which neither the safety valve can discharge, nor the boiler sustain. This is a common and satisfactory statement, and one which receives confirmation from the valuable experiments of Professor Johnson, of the Franklin Institute. There is, however, a mode of action in this vapor, and one which may be, in particular cases, of intense efficacy, that involves a mechanical effect additional to those above mentioned; and I embrace this opportunity of calling the attention of men of practical science in the steam engine, to the principle involved, as I do not remember ever to have met with it. It is well known that, if a charged gun barrel be so loaded as to leave a considerable space between the ball and charge, the piece will burst when fired. The French, and I believe the military rationale of the fact is, that the flame, reverberating from the ball back to the charge, creates a more perfect and sudden inflammation in the chamber than would otherwise take place. But, although this explanation does assign a real cause, we might ask whether the amount of gas thus sud-

denly evolved, can exceed that which was pent up in the same chamber, at the proof of the piece with double or even treble charges, and weight of ball? A more adequate cause might be assigned, arising out of the established principles of re-action: for when inflammation of the charge takes place, the whole volume of gas, urged by a pressure equivalent to hundreds of atmospheres, rushes towards the muzzle of the piece; but when it meets the ball, there is a sudden check in the moving mass, which must re-act laterally upon the chamber in the manner of a shock or blow. The accumulated force which the gaseous material has been progressively receiving from its evolution to its impact on the ball, is brought to bear in one instantaneous impulse on the sides of the piece which cannot resist the momentum, and swells or bursts. A most able mechanic, the same who is engaged in conducting the gun factory of the late Eli Whitney, of New-Haven, informed me, not long ago, that, at one period of their inspections by the United States' officer, more than a hundred barrels were ruined by being swelled or burst at the chamber, from some cause most inexplicable to the artificers, till at length they made a ponderous rammer, to drive home the balls with most unerring certainty, and the mysterious effect was experienced no longer. Now, to apply this principle of force to the subject in hand, when, in the case supposed, the water, by ebullition or by injection through the supply cocks, reaches the incandescent metal, not only an immense volume of vapor is suddenly generated, but, being generated within narrow limits, it must rush on every side with great velocity, and reach the limits of its confinement with accumulated momentum, and a shock similar in kind (though vastly less in amount) to that experienced in the case of the gun barrel already dwelt upon. This principle of force is a real cause of rupture, of an unknown degree of efficacy, and one which ought not to be neglected by practical men; for it may sometimes occur, in consequence of the same mode of action, that even without a deficiency of water, but merely from excess of steam, our present means of safety may become a cause of explosion; for if an overstrained boiler were suddenly relieved from its state of undue tension by a hasty opening of the escape valves in full, the water, being of high temperature, would fly into steam, which, though not in volume too excessive for the boiler to bear, would certainly rush with an upward motion to the limits of the boiler, and encounter the resistance there with a shock which might prove fatal. In every such case the escape valves should be opened very gradually. This may possibly prove to be the explanation of the circumstances which have been accounted so mysterious, that boilers placed apart, and connected only by the steam education pipes, manifest a sympathy through which, in case of rupture, a second boiler often follows the destiny of the first: for instance, in the late disaster of the New-England,

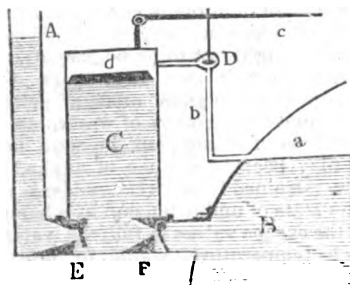
which was caused, it is believed, by excess of steam, and not by deficiency of water, it cannot be supposed that the two boilers were so nicely matched in strength that a given pressure in the same instant shattered both; but it may be supposed that, when the first exploded, and pressure was thus taken off the second through the eduction pipes, water flashed into steam in quantities equal to the discharge through the vent opened through the pipes, and met the boiler, already strained to its limit, with a momentum which proved fatal. This idea is countenanced by the first and second boilers in that unhappy disaster.

I now proceed to explain the prefixed figure, which is intended to represent a middle and vertical section made longitudinally through the boiler, and safety apparatus proposed and alluded to in the foregoing remarks. A B represent the lowest admissible water line; and the dotted line, above, the highest. At A is a cylindrical float, extending nearly to the bottom of the water; or, for the uniform cylinder, may be substituted the two cylinders combined in one float, as shown by the dotted figure at A. If this form be adopted, the lower cylinder must lie wholly immersed, when the water is free from ebullition, and the smaller must be as much less in cross area as the depth of immersion is less than the depth of water, in order to counteract the effects of ebullition. The float which is adopted must be open at bottom, to admit steam; and tight at the top and sides. It is to be attached to a lever, A B, working vertically around a fixed axis at B, and carrying the slide D by means of the rod shown in the figure, which must be so attached to the lever as to allow a slight horizontal play at the point shown at the bottom of the rod. The water line being shown in its lowest admissible position, it will be seen that, if it descend lower, the orifice in the sliding piece at D will come into junction with the lower orifice C, and emit a puff of steam into the fire room; and the lower the water descends, the greater will the quantity of steam which is emitted become. But if so much water be injected as to raise the water line above the dotted line parallel to A B, the orifice D will come into junction with the upper orifice C, and steam will be emitted thence.

The subordinate fixtures and arrangements there is no necessity for explaining. I would only add, that every thing in this arrangement, of which I am the author, is at the service of every one who can use any part of it to advantage. I am, Sir, yours, respectfully,

ALEXANDER C. TWINING.

We annex the following plan, suggested by Mr. John S. Williams, of Cincinnati, Ohio:



The principle may be thus applied:—Place the water chamber (C) either against the boiler, or at a distance on a level with it. This chamber must have one valve (E) opened toward it from the supply water, and another (F) from it towards the boiler, on the principle of the seat of the common force pump. By an escape-ment, or three-way cock (D), placed in a small pipe (b) leading from a, the steam in the boiler to the chamber the atmospheric and steam pressure may be alternated in the chamber, so as to allow the supply water first to flow into the chamber through E, and then from it

through F to the boiler. No force is required, except to work the very small escapement in the alternation pipe; and never while the supply water in A, and operation is kept up, will the water in the boiler rise higher or sink lower than the line a, above the level of which the chamber shall have capacity equal to the waste during the operation. d is a float to prevent condensation.

Or the same result may be produced, by placing the chamber C something higher than above described. Let the water in the supply pipe, reservoir, or cold water pump, A, be kept higher than the chamber C, which is furnished with valves, E and F, as before. Let the entrance of the alternation pipe b, be exactly at the water line a in the boiler B. By means of the lever c, work the double puppet valve D up and down; or provide any means so as alternately to shut the steam and air out of the chamber C. This is all the power required. It is evident that if the water in the boiler should be lower than a, the chamber would pour in more than the water, and raise the water to a; but if the water should happen to be higher than a, no steam could pass through b to displace the water in C; and of course there would be no supply until the water would be evaporated down to a, where it would stand for ever, provided the supply water in A, and the opening and shutting of D, were continued. When the steam is down, the boiler might be filled through E and F.

If the chamber C were placed in the common condenser, and subject to the action of the escape steam, the necessary supply of water, and no more, would be heated.

One apparatus will supply any number of connected boilers; but should one be attached to each boiler, and the boilers unconnected, a boat might be ever so much, or ever so long listed, without a possibility of the water being more exhausted in one than in another; and no more sediment would be collected in one boiler than in another. If, in addition to this, were each boiler furnished with a valve in the steam pipe, opening toward the cylinder, the following benefits would be the result of the arrangement. A weak boiler or flue would not be subjected to the strain of an accidental surcharge of steam in another. Should a surcharge happen in one boiler, it would occupy the whole safety valve for its relief. Should one boiler burst, or a flue in one collapse, the others would not be affected by it, and not a stroke of the engine would be lost, but the remaining boilers would continue to work the engine as if nothing had happened, unless the bed were deranged. Were one boiler to burst, that, and that only, would exert its power to destroy the boat and crew, and to derange the bed: whereas by the present system, the force of all is exerted by an accident in one. The above results might be obtained from one supplying apparatus, having a branch pipe with a valve F and stop cock, running into each boiler, for its separate supply.

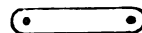
On increasing the Facilities for Transportation by Water. By JOHN N. POMEROY. To the Editor of the American Railroad Journal.

Sir,—Although my acquaintance with you is very limited, I hope you will pardon the liberty I take in addressing you. My profession necessarily occupies a great portion of my time and attention; nevertheless, I am not indifferent to the progress of improvements which are going on at such an astonishing rate in our country. The wonderful facilities for rapid transportation afforded by the introduction of railroads, and its vast superiority, in velocity at least, to the modes of transportation on the natural water communications throughout the country, could not but excite the inquiry—"Is it true, then, that the various rivers and arms of the sea, which intersect the face of the earth,

and which have been heretofore considered as great highways for the convenience of man, and designed as such—is it true that the progress of improvement is to prove these but *obstacles*, rather than *facilities*?" The present superiority of the railroad system would seem to indicate an affirmative answer to this question; but a reflecting mind would be unwilling to admit it, and would be led to inquire into the *reason* of the apparent superiority, and would, at all events, be induced to doubt the wisdom of man, rather than his Maker. What, then, is the reason why we cannot pass with equal (or with greater) facility and velocity through the water, as on the railroad? It is doubtless, chiefly, if not wholly, on account of the *law of resistance* to motion in fluids: can that be obviated? I do not hesitate to say it can, and will be. How? This leads me to the object of this letter, which is to describe a plan which I have invented for that purpose, and as your opinion, and, through you, the opinion of practical men, of whom, I think, you must number many among your friends or acquaintances. It appears to me to obviate the difficulty above referred to; but is the plan *practicable*; or are there insuperable practicable objections to it? In order to give you an idea of the plan above mentioned, or machine, I may as well describe the one which I have made; first premising that the object is to have the *sustaining* part of the vessel the part which moves and *gives motion*. The machine which I have made is composed, first, of 25 tin cylinders, 8 inches long, 2 inches in



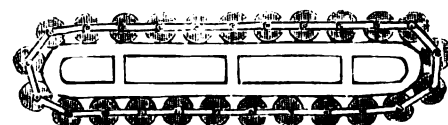
diameter, with caps at each end, water-tight, and a pivot also in each end, in the centre of the cap or head, say a half inch in length. These cylinders are connected together by a chain, composed of narrow strips of tin, having



holes at each end, and placed on the pivots, so that the cylinders nearly touch each other, not



quite; and so that the cylinders can revolve on the pivots without interfering. These cylinders, thus connected at each end, are made to enclose the *hull*, or boat, which is (as I have



made it for experiment) a frame about 18 inches long, 8½ inches wide, and 4 inches in height or thickness, and so turned at each end as to admit an easy path for the cylinders, and also so that the cylinders may strike the water in a proper direction. There is a flange on the exterior edge, or circumference of the frame, to prevent the cylinders from rolling off. It will now be perceived, I think, that a force exerted on the pivots in the same direction, on any one or more of the cylinders, that it will give motion to the whole, and when placed in the water, the machine, sustained by the buoyancy of the cylinders, must move as fast *ahead* as the cylinders pass through the water to the stern. This power in my machine is applied to the pivots of the cylinders by two wheels, on a shaft, which passes transversely through the machine, and plays on gudgeons at each end—

the wheels adapted by cogs to act on the pivots, and the shaft turned by a spring.

Now, what are the practical objections to the above? I admit the first impression must be unfavorable—it is, as a water-craft, entirely unique; but, appearances aside, it may be said that a vessel on this construction cannot be made sufficiently strong to sustain itself in rough water without being too heavy to derive the benefit proposed from the cylinders. It appears to me that the form of the hull is well adapted for strength, without much weight. As to the cylinders, it is more doubtful. I have supposed a vessel made of about 100 feet in length, and 30 feet broad, 10 feet high between the two floors, having 60 cylinders or barrels, each 30 feet long, 5 feet in diameter, and having 25 barrels, say, in the water, which would be about the number. Now, 25 of these barrels, entirely immersed, would sustain 450 tons; and it appears to me that a vessel complete of this construction and size might be made considerably within the limits; and it is to be borne in mind, that, from its mode of progression, it would not conflict with rough water, as ordinary vessels do, as the impinging cylinders would rather 'nullify' than make war with the opposing element. Would it not be top-heavy, and careen? I see no objection to its being made sufficiently broad to avoid this difficulty. Would it not be inconvenient? I should judge not, but the reverse, as the rooms might be made square, high, and with sufficient windows at the sides; and I see no objection to having guards, a deck fore and aft the cylinders, and a promenade deck over the cylinders. Would it require more power to produce a given velocity than ordinary steamboats? I think very far less; but the cylinders, which are in the water, would be much impeded in their revolutions (which must be rapid) by the water. If this be a difficulty, it may be avoided by wheels on the pivots, or gudgeons of the cylinders, which should sustain the cylinders and revolve on their axes, leaving the cylinders to pass the water without revolving.

I do not flatter myself that I have nullified all objections which may be raised to the practicability of the above plan. What I have said is by way of suggestion; and having had the subject on my mind for two or three years, I am anxious to relieve myself, by getting the opinion of experimental and scientific mechanics, as to its practicability and probable utility. The same principle, I am inclined to think, may be applied to railroad cars with many advantages.

Very respectfully, yours, &c.

JOHN N. POMEROY.

Report of WALTER GWYNN, Esq., Engineer, to the President and Directors of the Portsmouth and Roanoke Railroad Company.

[Continued from page 24.]

The difficulties to be overcome having been adverted to, and the plan of the work described, I have next to submit to you the probable cost of the railroad.

The gradation on division I, from Portsmouth to Suffolk, is finished, a portion of the road has been laid, and nearly all of the timbers delivered. It is contemplated to complete it in the course of the winter, or very early in the spring. On this section of the road, the Dismal Swamp is encountered and successfully crossed; large ditches were dug, which sufficiently drained and furnished materials for the substratum of the road-bed, and this covered with sand to the depth of a foot or more, formed at once a durable and unyielding foundation for the superstructure. Capt. Crozer's estimate of \$90,563, for this portion of the work, will prove more than adequate; the cost will not exceed \$75,000; which will be for

DIVISION I.—From Portsmouth to Suffolk—17 miles.
At \$4411 76 per mile, \$75,000

DIVISION II.—From Main Street, in Suffolk, to Station 290—10 miles.
Excavation—108,923 cubic yards, at 9 cents per yard, \$10,347 68
Embankment—123,213 " at 10 cents, 12,321 30
Four Stone Drains, 1,000
Abutment at Smith's Branch, including Bridge, 4,200
Six Truss Bridges, 600

One hundred and sixty tons iron, at \$45 per ton, 7,200
Six Tons of Spikes, at \$198 per ton, 1,188
Splicing Plates, at \$15 per mile, 150
105,600 lineal ft. heart pine Rails, \$50 p. 1,000 ft., 5,280
10,560 Sills, at 50 cents per Sill, 5,280
21,120 Oak Wedges, at 31 cents per wedge, 739 20
Carpenter's work, Horse-path, &c., \$704 per mile, 7,040 J

Total, \$55,846 18

DIVISION III.—From Station 290 to Station 525, on the West bank of the Blackwater—9 miles.

Excavation—90,849 cubic yards, 9 cents p. yd. \$8,176 41
Embankment—92,358 " 10 " 8,647 59
20 Truss Bridges, 1,500
Stone abutments, Pier & Bridge across Blackwater, 9,500
144 Tons of Iron, at \$45 per ton, 6,480
Spikes, at \$118 80 per M., 1,069 20
Splicing Plates, at \$15 per mile, 135
95,040 lineal ft. heart pine Rails, \$47 per 1,000 ft., 4,466 88
9,504 Sills, at 40 cents, 3,801 60
19,008 Wedges, at 31 cents, 665 28
Carpenter's work, Horse-path, &c., \$704 p. mile, 6,336

Total, \$50,777 96

DIVISION IV.—From the Blackwater to Station 672, on the West bank of the Nottoway—5 miles, 2275 feet.

Excavation—12,375 cubic yards, 9 cents p. yard, \$1,113 75
Embankment—60,735 " 10 " 6,377 17
Stone abutments, Pier & Bridge over Nottoway, 11,100
87 Tons Iron, \$45 per ton, 3,915
Spikes, at \$118 80 cents, per mile, 645 08
Splicing plates, \$15 " 81 45
57,350 lineal feet heart pine Rails, \$47 " 2,695 45
5,735 Sills, at 37 cents, 2121 95
11,468 Wedges, at 31 cents, 401 38
Carpenter's work, Horse-path, &c., \$704 per mile, 3,823 20

Total, \$32,274 43

DIVISION V.—From the Nottoway to Cypress Bridge Road—4 miles, 1665 feet.

Excavation—16,931 cubic yards, at 9 cents, \$4,223 79
Embankment—43,202 " 10 " 4,320 20
69 Tons of Iron, at \$45 per ton, 3,105
Spikes, at \$118 80 per mile, 512 02
Splicing plates at \$15 " 64 65
45,530 lineal ft. heart pine Rails, \$47 p. 1,000 ft., 2,140 85
4,555 Sills, at 40 cents, 1,822
9,110 Wedges, at 31 cents, 318 85
Carpenter's work, Horse-path, &c., \$704 per mile, 3,034 24

Total, \$19,741 60

DIVISION VI.—From Cypress Bridge Road to Buckhorn Run—3 miles, 3000 feet.

Excavation—91,069 cubic yds. 31 cts. p. yd. \$9,126 55
Embankment—92,516 " 10 " 9,251 60
153 Tons of Iron, at \$45 per ton, 6,885
Spikes, at \$118 80 per M., 1,135 72
Splicing plates, at \$15, 143 40
110,040 lineal ft. heart pine rails, \$47 p. 1000 ft., 4,748 88
10,104 Sills, at 40 cents, 4,041 60
20,208 Wedges, at 31 cents, 707 28
Carpenter's Work, Horse-path, &c. \$704 p. mile, 6,730 24

Total, \$42,770 27

DIVISION VII.—From Buckhorn Run to Station 1146, on the West bank of the Meherrin—4 miles, 70 feet.

Excavation—12,411 cubic yards, at 9 cents, \$1,116 99
Embankment—46,143 " 10 cents, 4,614 30
Stone abutments, Bridge and Pier across the Meherrin, 14,500
Truss Bridge across Buckhorn Run, 120
64 Tons of Iron, at \$45 per ton, 2,880
Spikes, at \$118 80 per M., 476 73
Splicing plates, at \$15, 60
42,380 lineal ft. heart pine Rails, at \$47 per 1000, 1,991 86
4,238 Sills, at 40 cents, 1,695 20
8,476 Wedges, at 31 cents, 296 66
Carpenter's Work, Horse-path, &c., \$704 p. mile, 2,816

Total, \$30,567 74

DIVISION VIII.—From the Meherrin to Station 1288—5 miles, 1570 feet.

Excavation—77,447 cubic yards, at 9 cents, \$6,970 23
Embankment—113,927 cubic yards, at 10 cents, 11,392 70
Truss Bridges, 500
86 Tons of Iron, at \$45 per ton, 3,870
Spikes, at \$118 80 per M., 633 60
Splicing plates, at \$15, 80
55,940 lineal ft. heart pine Rails, at \$45 p. 1000 ft., 2,517 30
5,594 Sills, at 40 cents, 2,237 60
11,188 Wedges, at 31 cents, 391 58
Carpenter's Work, Horse-path, &c., \$704 p. mile, 3,754 66

Total, \$32,347 67

DIVISION IX.—From Station 1288 to Station 1406, on the Summit—4 miles, 2450 feet.

Excavation—67,531 cubic yds., at 9 cents per yd. \$6,077 79
Embankment—56,763 " at 10 " 5,676 80
71 Tons of Iron, at \$45 per ton, 3,195
Spikes, at \$118 80 per M., 529 84
Splicing Plates, at \$15, 66 90
71,140 lineal ft. heart pine Rails, \$45 per 1000 ft., 2,121 30
714 Sills, at 40 cents, 1,885 60

9,428 Wedges, at 31, 329 98
Carpenter's Work, Horse-path, &c., \$704 p. mile, 3,139 84

Total, \$23,023 05

DIVISION X.—From the Summit to the Roanoke—7 miles, 4700 feet.

Excavation—11,460 cubic yards, at 9 cents, \$9,941 40
Embankment—117,978 " at 10 cents, 11,797 80
Truss Bridges and Stone Drains, 1,100
126 Tons of Iron, at \$45 per ton, 5,670
Spikes, \$118 80 per mile, 937 33
Splicing plates, \$15 " 118 35
83,320 lineal feet heart pine Rails, \$45 per 1000 ft., 3,749 40
8,332 Sills, at 40 cents, 3,332 80
16,664 Wedges, at 31 cents, 583 24
Carpenter's Work, Horse-path, &c., \$704 p. mile, 5,554 66

Total, \$42,784 88

Summary of the estimates of Excavation, Embankment, Bridges and Superstructure.

Division	Miles	Estimate
Division I.	17 miles.	\$75,000 00
" II.	10 "	55,846 18
" III.	9 "	50,777 96
" IV.	5 " 2275 feet,	32,274 43
" V.	4 " 1655 "	19,741 60
" VI.	3 " 3000 "	42,770 27
" VII.	4 " 70 "	30,567 74
" VIII.	5 " 1570 "	32,347 67
" IX.	4 " 2450 "	23,023 05
" X.	7 " 4700 "	42,784 88
	59 " 5160 "	\$405,138 78

Add for contingencies, superintendence, land damages, the extension of the Road to the wharves in Portsmouth, warehouses, shops, water-stations, passing places, &c. \$69,666 22

Total amount, \$475,000 00

The foregoing aggregate amount, it is believed, embraces every item of expenditure that is likely to occur. The increased demand for labor, which may be occasioned by the commencement of the James River and Kanawha Improvement, and other works contemplated in Virginia and North Carolina, is the only contingency that can affect the cost of this road. This I have endeavored to provide for, by estimating the amount of work as exhibited on the profile; notwithstanding I am confident that the line is susceptible of modifications, by which the amount of excavation and embankment may be materially lessened, and the grade and direction at the same time considerably improved.

I am unable, at this time, to form any correct estimate of the revenue likely to be derived as a return for the capital expended. It may, however, be expected, that I should offer a few general remarks on a subject of so much importance. The direct communication which this railway, in connection with the Chesapeake Bay, and the French Town and Newcastle railroad, offers between the northern and southern cities, the speed, comfort, and perfect safety, with which passengers can be conveyed through this route, must certainly secure to this company a considerable revenue. The favorable point selected for the termination of this road on the Roanoke—the probable prolongation of a railroad from Weldon, southwardly, by the enterprising citizens of North Carolina—the certainty that to Weldon, as a place of deposit, the heavy and profitable products of that country, and of the valley of the Roanoke, must go—thence, most probably finding their way on your railroad to Norfolk, justify the most sanguine calculations of considerable and lasting revenue to your Company.

The importance of this communication to the whole district of country through which it passes, and especially to Norfolk and Portsmouth, is too well known and appreciated to be dwelt on here.

I have the honor to be, gentlemen, very respectfully, your obedient servant,

WALTER GWYNN, Engineer.

The stock of the Liverpool and Manchester Railroad Company sold in London on the 19th of November at £190 per share, £100 original cost.

The Stanhope and Tyne Railroad Company are proceeding rapidly in the formation of their line of way from Stanhope to South Shields. They have engaged to perfect their splendid undertaking by forming branches from below Bolden to Monkwearmouth and Heworth; the latter will join the intended continuation of the Carlisle Railway, affording a communication between Carlisle, Stanhope, the Hartlepool Railway, Monkwearmouth, Gateshead, and South Shields.—[Tyne Mercury.]

[From the *Mechanics' Magazine*.]

State of Manufactures in America—Evidence of Mr. James Kempson, of Philadelphia, Cotton Manufacturer. [From the Factory Commissioners' Report in Great Britain.]

Most of our readers, doubtless, have heard of the struggle that has been going on between capitalists in England and the friends of amelioration of the condition of the working classes in that country, particularly of those who have not arrived at maturity, and are in fact in a much worse condition than most slaves in any part of the world. The philanthropists succeeded so far as to obtain a parliamentary commission of inquiry, which was followed up by the introduction of a bill into the House of Commons, regulating the hours of work in factories for all boys and girls under fourteen years of age, we believe. That bill passed the House of Commons, but the *House of Incurables*, (the Lords,) as they have been so well termed, thought fit to reject it.

In the course of the investigation, Mr. Kempson, of Philadelphia, was examined, and his testimony we now insert, and we are sure it will be perused with feelings of pride by all our readers.

With what extent of manufactures have you been conversant in America?—I have been acquainted with the manner of conducting manufactures in most of the manufacturing states.

What number of workmen do you employ in your manufactory?—About four hundred.

What is the lowest age of persons in your employment? None under nine.

Have you many about nine years of age?—We have a great many between nine and twelve. About one-fifteenth of the persons employed in the United States are under twelve years of age.

What is the utmost extent of your daily working hours?—The actual number of working hours averages throughout the year twelve hours of actual work; at some seasons it is nearly fourteen, and at others it is little more than ten.

Is the labor for fourteen hours often continuous for many successive days?—We change the period by the light. We never light up in the mornings, nor in the evenings, from the 20th of March to the 20th of September; and from the 20th of September to the 20th of March following, we work until eight o'clock of the evening.

Do the children work during the whole hours of work?—Yes; we never make any difference on account of age.

Have any complaints been made in the United States as to the propriety of such extent of labor for children?—There have been newspaper complaints, originating probably from the workmen who came from this country to the United States; but among our workmen there is no desire to have the hours of labor shortened, since they see that it will necessarily be accompanied by a reduction of their wages.

What proportion of the persons employed are natives of the United States?—Throughout New-England, which are considered the manufacturing states, above eight-tenths of

the persons employed are natives of the United States.

Are many of the remaining two-tenths English workmen?—The greater portion of them; but, as a general rule, they do not like to take English workmen in the New-England factories.

Why do they not like the English workmen?—Because they are so dissipated and so discontented.

Is this their general character in the United States?—Yes; after they have been some time in the country, they are noted as the greatest drunkards we have. The whole-sale price of whiskey is, with us, nine pence per gallon, and they appear not to be able to overcome the temptation. Our own workmen are *better educated, and more intelligent, and more moral, and refrain more from sensual indulgence.*

How does the discontent of the English workmen, of which you have spoken, usually manifest itself?—In the workmen becoming masters, in strikes, and demands for wages, almost always ill-considered, with which the master cannot comply, and which grievously interfere with his commercial operations; their ignorant expectations generate ill will and hostility towards the masters.

Are no jealousies entertained by the American workmen towards their masters?—In America we never hear the word master; they usually speak of the manufacturer by name, or as their employer, and view him rather as a tradesman to whom they dispose of their labor, than as a person having a hostile interest. There are no jealousies between American masters and workmen, of the nature of those which appear to prevail between the English workmen and their employers.

Are there no combinations to keep up wages in America?—None amongst the American cotton manufacturers.

Are there no combination laws?—None.

To what do you attribute this state of things among the American workmen?—To their superior education, to their moral instruction, and to their temperate habits.

Have you any national system of education?—We have public schools, supported partly by state funds, and partly by bequests. All children have the privilege of attending.

Do they, in point of fact, very generally attend in the manufacturing states?—They universally attend; and I think that information is more universally diffused through the villages and the whole community of the New-England states, than amongst any other community of which I have any knowledge.

What is the general view taken of these schools by the manufacturers and persons of wealth in America?—From their experience they deem them of the greatest importance to the welfare of the state. They are encouraged by the state governments and all the leading persons of the state.

How do the children whom they employ obtain education?—The manufacturers are always anxious that the children should absent themselves from the manufactory during two or three months of the year to attend the schools. The manufacturer very frequently suggests to the parents the necessity of the children being taken to school. The sending the child to school is generally an inconvenience to the manufacturer.

Is the inconvenience of the children going to school such as to increase the cost of pro-

duction?—I do not think it does increase the cost of production. The only inconvenience is in the trouble of getting other hands. We think the advantage of their being educated more than counterbalances that trouble.

What is the nature of this national education?—It consists in reading, writing, arithmetic, grammar, and geography.

Do the workmen read much?—Yes; we have frequently a difficulty in keeping books out of the hands of some of them when they should be engaged in their work.

What sort of books do they usually read?—Voyages and travels are the most favorite reading with them. They are also great readers of newspapers, and some of the workmen take two or three.

Then what is the cost of each newspaper?—Less than 2d.

What wages do you usually give?—We employ them by the year. A person ten years old would get 3s. a week; a person twelve years old, 4s. a week; fourteen years, 5s.; sixteen, 6s.; eighteen, 8s. Those more advanced in years would earn 10s. The smaller children in the carding room are those who earn 3s. a week; those attending the drawing frames earn from 5s. to 6s.; those who attend the roving frames earn 8s. a week; girls attending the throstle-frames earn from 5s. to 8s.; machine makers earn about 5s. a day; mule spinners earn about 5s. a day; overlookers earn from 5s. to 6s. a day; assistant overlookers from 3s. to 4s. a day.

What do the men pay for board when they board with families?—From 6s. to 7s. per week.

What do young women pay?—Five shillings per week.

And children?—They generally board with their parents.

What is the description of fare usually obtained by the American workmen?—Nearly the same articles as those used by the more wealthy classes. They have as much meat as they wish twice a day; they have fruit pies at every meal; in short, as I have stated before a committee of the House of Commons, I have paid eight shillings a week for board, lodging, and washing, and live as well as I could live in equal lodgings in a village in England for two pounds a week.

What is the difference in the effects between fourteen and ten hours' work on the health of the persons employed, so far as you have observed in America?—When they worked twelve hours, the thermometer stood at 103°, and they were then more unhealthy than when they were working twelve hours in the winter season; but I believe that those who were in the mill enjoyed better health, both during summer and winter, than those who worked at agricultural employments, or than those who were idle. I state this from my own observation. I resided at the house of a medical practitioner, who had the practice of most of the persons who were employed at the mill, as well as of most of those who were employed in agriculture, and my own observation was corroborated by his reports, as to the sickness prevalent. Thus I received my impression of the superior healthiness of those engaged in the factory.

Are the American children stronger or weaker than the children of the English operatives?—The youngest American children are, I think, rather the strongest. Since No.

vember last I have been engaged in visiting the manufactories here, and I should say, that, on the whole, the children are rather stronger in America than they are here.

Would you call the English manufacturing children, as a body, unhealthy?—No; I should almost think they are as healthy as the children in the agricultural districts. I have noticed that the children of a factory in a village usually look better than the children of a factory in a town. I should think this might be accounted for from the difference of the residences in the villages as compared with the residences in the towns, where they appear to work longer hours.

Does your experience in America of the short as compared with the long hours, enable you to form any judgment as to the probable effects upon the health or comforts of the workmen of a reduction of the working hours to ten in this country?—The climate is so different that I can form no judgment. The longest hours of our work are during periods of the most oppressive heat.

Do the children attend school at any particular period?—No; they attend during one period as much as another.

Do they select the times of the long or of the short hours?—I do not think they make any selection as to the hours of work. If they selected the time of the long hours they would have the night-work of the winter. They would, I think, as soon have the longer hours of the summer to avoid night-work.

What is the nature of your manufacture?—Spinning and weaving coarse yarn.

Is any of it for exportation?—Yes.

To what markets?—South America, West and East Indian markets.

Do you find that you can compete successfully with British manufactures of a similar kind in the same markets?—Yes; although we labor under some disadvantages that you do not.

What disadvantages?—One of our disadvantages is, that in the East India markets we have to pay a duty which you do not pay; and we have to pay six per cent. interest on the advance, which is considerably higher than you have to pay. A further disadvantage we labor under is, that whereas a large proportion of your manufacturers export their goods direct, and are therefore not subject to any commission on the shipment, our manufacturers never export on their own account, and the shipping merchant starts with a commission of five per cent. on the price which the manufacturer receives.

Have the goodness to explain the nature of the charge of five per cent. commission to which the article is subject prior to shipment?—The manufacturer sends his goods to a commission merchant at the shipping ports, who receives five per cent. for selling and guaranteeing.

And notwithstanding these drawbacks you can maintain the competition with us?—Yes; and not so only, but are gaining ground upon you, and have already excluded you from some markets.

From what markets?—Some of the Mexican and South American. Several of our largest establishments have large contracts pending for a long time forward for those markets, at prices which would not give a fair return to the British manufacturer, but are very profitable to our manufacturers.

You say this from having ascertained, du-

ring your visit to Manchester and other manufacturing districts in this country, the exact state of the relative prices?—Yes.

What are the present relative prices of yarn,—for instance, of No. 16?—No. 16, water twist, made entirely of good cotton, sells in the United States at 10½d. per lb.; in England, No. 16, yarn, made from a mixture of waste twists, and a small quantity of boweds, sells at 11d. per lb. The price of 10½d. in America is from the commission merchant, who receives 5 per cent. for sel-

	United States.	England.
Interest on dressing machine,	£2 11	£1 12
Do. twelve power looms,	8 6	4 10
Cost per annum of one horse power,	3 10	12 10, at 5 per cent.
Cost of dressing 3,756 pieces,	23 9	46 18
Cost of weaving,	125 4	156 10

American, 10½d. per piece, £163 0—England, 11d. £222 0

How do you account for the difference between £3 10s., which you state as the cost per annum of one horse power, and £12 10s. as the cost in England?—In America it is water power, which exists there in great abundance, at a very low rent, even in the best situations; whereas in this country it is mostly steam power, or, if water power, at a very high rent.

What do you reckon will be the effect on the cost of production of your manufacture, if the working hours of your mills were, by an act of your legislature, to be reduced from an average of 12 to 10 hours?—They would be increased in price about ten per cent.

Have you the means of showing how the reduced hours of work would operate on the cost of production?—Yes, by the following statement:

Estimated value of the cotton manufacture of the United States—Wages, £2,087,400; cotton, £1,800,000; profit and interest, £1,529,266; annual value, £5,416,666. Now, supposing a legislative enactment to limit the working hours to ten, and in consequence of foreign competition the value of the goods must not be increased, and in order to make the same quantity he must employ one sixth more hands, and the interest on this increased investment must be deducted from the wages, for no other item can be reduced; taking the interest, wear and tear, at 8 per cent. upon this further investment, the amount will be £112,819.

£2,087,400 wages, as before
112,819

£1,974,581 wages after.

The number employed previous to this supposed alteration was 62,157, receiving upon an average annually £33 10s. The number increased to 72,572 would receive £27 4s. Supposing the workmen not reduced in their wages, the amount would stand: Wages, £2,429,998; interest on the investment, £112,819; cotton, £1,800,000; interest and profit, £1,529,266; total, £5,872,073.

What, in your opinion, would be the effect of a compulsory limitation of the working hours in this country to ten instead of twelve, upon the manufactures of the United States?—It would tend much to their increase. I think we should not only be able to undersell you in markets abroad, but even in your home market.

Do you mean after paying the present import duty into this country of ten per cent?—Yes.

ling it on eight months' credit; and the price of 11d. in England is on three months' credit from a manufacturer.

Do you consider the price of 10½d. to be remunerative to the American manufacturer?—Decidedly so.

And do you consider that you have equal advantages in weaving?—Yes.

Have you the means of showing what is the comparative cost of weaving in the United States and in this country?—Yes, I can show it by the following statement:

Do you not think that we should be under the necessity, in such a case, of adopting your tariff system?—Most undoubtedly, if you wished to preserve even your home market.

ADVICE ON THE CARE AND MANAGEMENT OF TOOLS.—From a new edition of the Cabinet Maker's Guide, we quote the following:

"The goodness of saws, chisels, and other edge tools, depends upon the quality of the steel, which should be uniform throughout, and it is always better to have them tempered too hard than too soft, for use will reduce the temper. If at any time you wish to restore the temper, and to perform the operation yourself, the best method is to melt a sufficient quantity of lead to immerse the cutting part of the tool. Having previously brightened its surface, then plunge it into the melted lead for a few minutes, till it gets sufficiently hot to melt a candle, with which rub its surface; then plunge it in again and keep it there until the steel assumes a straw color, (but be careful not to let it turn blue,) when that is the case take it out, rub it again with the tallow, and let it cool; if it should be too soft, wipe the grease off and repeat the process without the tallow, and when sufficiently hot, plunge it into cold spring water or water and vinegar mixed.

"By a proper attention to these directions, and a little practice, every workman will have it in his power to give a proper temper to the tools he may use.

"If a saw is too hard, it may be tempered by the same means; if you are near a plumber's shop, you may repeat the process conveniently and without expense, when they are melting a pot of lead.

"In other cutting tools you must wait till the steel just begins to turn blue, which is a temper that will give it more elasticity, and at the same time sufficient hardness."

CENTRE OF GRAVITY OF A SHIP.—A discovery, which is likely to be attended with important results to the navy, has recently been made by Commander John Pearce, R. N., of Plymouth. This officer, from various circumstances, was led to doubt that the centre of gravity of a ship was the axis of rotation, as hitherto imagined, and that this was the cause of so many errors occurring in masting. He accordingly proceeded to ascertain the truth of his doubts, by experiments on different models, which he has continued for upwards of twelve months, and the result, we understand, cannot fail to render the science of ship-building more comprehensive and demonstrative, as well as lead to the cor-

rection of other errors in the theory equally worthy of consideration! The axis of rotation has been fixed, by Capt. Pearce's experiment, at some distance above the gravity of the ship, and in the point which is known by the name of the lacentre; and we understand he considers the complexity of the theory, and not having considered the subject in a sufficiently practical shape, to have led authors into the error of confounding the centre of gravity of the ship with the axis of rotation; and that this has led to the error of supposing the lateral effort of the water, or resistance to leeway, to produce effects contrary to truth, and from which proceeds the present imperfect system of masting. In fact, the discovery of the true axis of rotation will be a complete key to the improvement of naval architecture, as *all the forces*, which are so constantly and variously acting, are estimated by the distances from the axis of rotation to the points where they are applied.—[London paper.]

AGRICULTURAL.

Selected from the N. Y. Farmer and Gardener's Magazine.

Economy of Cutting Hay for Horses—Improved Straw and Hay Cutting Machine. By The Editor.

It is stated in the publications of Great Britain, that the economy of using cut hay and straw has been fully and generally tested, particularly by stage proprietors, who, in consequence of the powerful competition from steamboats, were driven to contrive ways and means to lessen the expenses of keeping their horses, without diminishing their efficiency. They accomplished their objects in the substitution of cut hay for long hay. Similar circumstances have compelled the owners of stage horses in this country to adopt the same course.

Mr. Reeside, one of the largest mail contractors in the United States, has, we are informed, adopted the plan with very great saving in expense, and with much additional performance by his horses. It was the admirable condition of his stage horses that led the superintendent of the streets of this city, J. M. Bloodgood, Esq. to make inquiries, and to adopt a similar course of keeping the horses belonging to the corporation of New-York. On application to Mr. B. we were politely furnished with the following particulars:

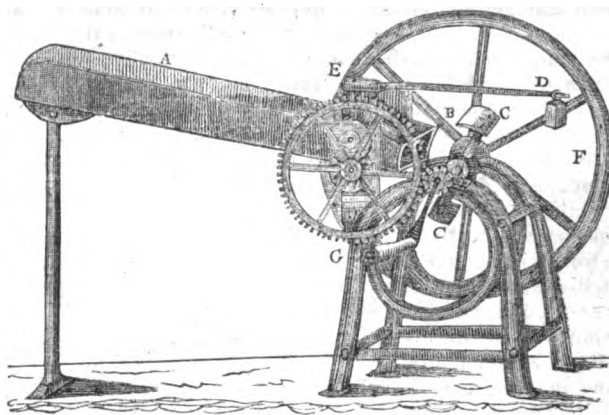
The number of horses employed in carting street manure is generally twenty, and sometimes one or two more, or less.

In six months of 1831, when the hay was not cut, the following quantities were bought for their consumption:

January, 4,480 pounds; February, 10,304; March, 2,240; April, 15,680; May, 6,200; June, 5,000. Total, 43,904 pounds.

In six months of 1833—January, 4,000 pounds; February, 5,000; March, 5,300; April, 2,000; May, 7,000; June, 5,000. Total, 28,300 pounds.

One bushel of cut hay is given three times a day, with 4 quarts of ship stuff, and 2 quarts of Indian meal, at each feeding. Oats are sometimes given once a day instead of the hay and meal. Under this feeding, which may be considered pretty high, the horses, though they labor hard, are kept in much better condition than when long hay and oats were given. The



present plan of feeding is considered to be a saving in expense at least one third.

One reason why the horses, on this system of feeding, are much more invigorated and in finer order, is that they are not obliged to labor all night in eating dry hay, but have time to obtain rest and sleep.

One thing is pretty evident—the time will soon come when cut straw and hay, packed in bags, &c. will be brought to this city from the “far west.”

The cutting machine used at the corporation stables is that made by Mr. Johnson, of this city. The following drawing, which we take from the Edinburgh Quarterly Journal of Agriculture, is described as an improvement on that made by Mr. Johnson.

Some years ago, the straw or hay cutter took a new form, under the hands of a person who seems to have taken out a patent for the improvement. In this, the cutters are made to revolve, by being fixed upon a skeleton cylinder on the fly wheel shaft, the hay being brought forward by a pair of feeding-rollers, as had been done on some former occasions; but in this case, the progressive motion of the hay was constant, which enabled the inventor to dispense with the machinery required for producing the intermitting progress of the hay. Immediately on passing through the feeding-rollers, the hay is protruded through a cutting-box, the face of which is worked off to an interior cylindrical surface. The cutters, which may be of any number from one to four or more, are placed diagonally upon the skeleton cylinder. The diagonal position is considered necessary for the cutters, as they thereby pass through the hay with an oblique cut, producing an effect resembling that of shears, and which prevents the shock that would attend the stroke of the cutters if the whole length of its edge were to come in contact with the hay at the same instant.

From experience, however, it is now found that the oblique position of the cutters is attended with considerable inconvenience to the workmen, arising from the difficulty of setting the cutters when they have been removed for sharpening, or for any other purpose. The difficulty attending this operation may be easily conceived, when we consider that the edge of the cutters, when in proper adjustment, must form part of the sections of a cylinder, or of an elliptic curve; and hence the difficulty of its adjustment, with sufficient accuracy to insure good performance; for, unless the edge of the cutter come into all but actual contact with the lower edge of the cutting-box, the lower stratum of hay will be left uncut.

The defective position of the cutters in the hay-cutting machine having been suggested to Mr. Slight, of the firm of Messrs. Slight and Lillie, engineers, and model and machine makers to the Highland Society of Scotland, he has rectified the defect, and has produced a machine possessing the property of having the edge or

the cutters parallel to the axis of the fly-wheel on which they are mounted; and in order to retain the advantages of an oblique passage through the body of hay, the cutting-box is elongated into a nozzle, which is twisted until the mouth of it assumes an angle of about 30°. The face of the nozzle is worked off as in former machines to an interior segment of a cylinder, concentric with the shaft of the fly-wheel. By this arrangement, which is just reversing the former position of the cutting parts, the entire efficiency of the machine is retained, while its construction is simplified, the price proportionally reduced, and the keeping it in order also rendered much simpler.

The annexed cut exhibits one of these improved machines, as manufactured by Messrs. Slight and Lillie, with the framing made entirely of cast iron. A is the feeding-trough, the rollers being only partially seen. B is the nozzle or cutting-box. C C, the cutter-bearers, with the cutters attached by their bolts. D is a lever and weight, which, through the medium of the bridge E, keeps a constant pressure on the feeding-rollers, to counteract any inequality of feeding. F is the fly-wheel for equalizing the motion; and G, the handle to which the power is applied. The small pinion on the fly-wheel shaft gives motion to the spur-wheel, which is mounted on the shaft of the lower feeding-roller, and carries also the lower feeding-pinion. This last pinion works into the pinion of the upper roller, and both being furnished with very long teeth, they thereby admit of a limited range of distance between the rollers, according to the quantity of feed.

With one of these machines, a man, assisted by a boy to feed in the hay or straw, can cut at the rate of eight stones per hour; and that quantity of cut hay is found to be sufficient for sixteen horses for twenty-four hours.

The machine, of which the above is a figure and description, combines, in an eminent degree, expedition and efficiency, with ease to the workman. We do not think it can be made of a simpler construction.

Cultivation of Peach Trees. By R. H. B.

[For the New-York Farmer.]

Peach trees may be preserved, by good management, twenty, and probably forty or fifty years. They are destroyed from north latitude forty to thirty-six degrees, by a worm which feeds on the inner bark of the tree, at its root. This worm is said to be the offspring of a fly of the wasp kind, which deposits its eggs in the bark of the root of the tree while it is young and tender. The remedy consists in searching for the openings in the bark at the root, and taking them out. If this operation is repeated three or four springs, the worm never after can make a lodgement there. The bark of the tree by this time becomes so hard, that the fly cannot make the puncture, in order to deposit the egg, or if deposited it perishes. After the worm is cut out in the spring, draw the earth up around the

body six or eight inches above the other ground.

Of all the fruit trees produced in this climate, none bears pruning so freely as the peach; indeed, it should be treated very much as the vine is. All those branches which have borne fruit should be cut out, if there is young wood to supply their places. Proof—take a limb which has borne two or three crops of fruit, and notice its produce; take another on the same tree, which has never borne at all, and the fruit on this last will be twice the size of the former, fairer, and less liable to rot. In pruning, the branches should be taken or cut out of the middle of the tree: thus giving more air and sun to the fruit on the outer limbs.

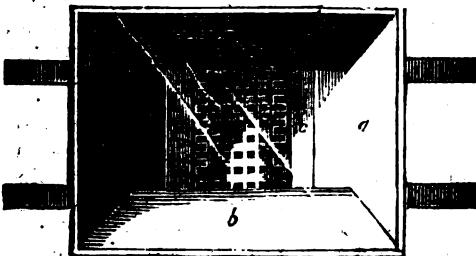
The peach tree produces best fruit when the ground is not stirred about it while the fruit is on. When it has no fruit, it should be cultivated as carefully as a cabbage, or any other plant.

The above comprises the most important points in the rearing of peach trees, and good fruit; if attended to, I have never known them to fail,—and my experience has not been very limited.

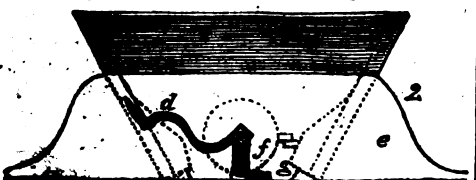
I repeat what may, perhaps, be doubted, that the peach tree, if the worm is kept out of the root, will live, at least, twenty years; and that this may certainly be done by attacking them the first year of its growth, and continuing to extract them for three or four years in succession, not forgetting to draw the earth up as directed. Straw, chips, or trash of any kind, serve the purpose just as well.

Very respectfully, yours, &c. R. H. B.
Washington City, Nov. 26, 1833.

CURD-BREAKER FOR SKIM MILK CHEESE.—We have heard of many curious experiments adopted by housewives, and some of them highly ludicrous, to facilitate the breaking of curd. This simple instrument is a happy substitute for every sort of expedient. With it any boy or girl can break the curd arising from the milk of eight or ten cows in fifteen minutes. It is not intended for the making of sweet milk cheese, the curd of which should be broken very gently. It was invented by Mr. Robert Barlas, Gilmour Place, Edinburgh, and has been in use on some farms for several years past.



a, fig. 1, is a hopper of wood, 17½ inches by 14 on the top, and 10 inches in depth. b is a cylinder of hard wood 6½ inches in length, and 3½ in diameter. It is studded with hard wood square pegs of a quarter of an inch in the side, cut square at the ends, and projecting three-eighths of an inch. There are eight teeth in the length, and fifteen in the circumference, of the cylinder, 120 teeth in all. It revolves on a round iron axle 12 inches in length, and is moved by the crank-handle d in fig. 2; c c are



two wedge-shaped pieces of hard wood, made to fill up in some degree the space between the side of the hopper and the cylinder. These pieces rest on a slip of wood nailed to the lower rim of the hopper, to keep them in their place. The face of these is studded with nine teeth of hard wood, similar to those on the cylinder, in a horizontal position, but so placed as to embrace those of the cylinder at opposite sides. The stand e, fig. 2, can be made of any length, to suit the breadth of the tub into which the curd is broken. The implement is used in this manner: place it over a tub, heap the hopper a with curd, and turn the winch d in either direction, and the curd will fall quite small broken into the tub. While one hand is moving the machine, the other can press the curd gently down into the hopper. As cleanliness is a matter of the greatest importance in cheese-making, the internal parts of this machine being loosely put together, can easily be taken to pieces to clean. The cylinder axle rests on two hard wood plumber-blocks, f, fig. 2, one on each side, which slip out of their groove. They are held in their working position by the thumb-catch g, sunk flush with the bottom of the stand e, one over each plumber-block. The wedge-shaped pieces c c, fig. 1, come out. To prevent the curd working out of the sides of the axle, the cylinder is set a little at both ends into the sides of the hopper. The dotted lines in fig. 2 will give an idea how the internal part of the machine is constructed. Only one tooth is represented on the cylinder by the dotted lines, to show the position of the whole.—[Edinburgh Quarterly Journal of Agriculture.]

The Farmer's Magazine, conducted by the Editor of the Mark Lane Express. London.

This is a cheap quarto publication, issued in eight weekly pages, and stitched and covered. Having just finished reading the greater part of the Magazine for the years 1832 and 1833, we shall now lay before our readers abridged notices and extracts that we deem of interest to our readers.

The **WELSH PONY** is one of the most beautiful little animals that can be imagined. He has a small head, high withers, deep, yet round, barrel, short joints, flat legs, and good round feet. He will live on any fare, and can never be tired out.

WHEAT.—The red lammas wheat, red straw, or red ear, is reckoned by many farmers the best of all the sorts hitherto known, yielding the finest and whitest flour.

Velvet wheat yields also much white flour, is thin skinned, less subject to mildew and blight than other wheat, as the downy hull appears to protect it. It is grown much in the Isle of Thanet, on the sea-coast.

USE OF THE BRAMBLE.—This shrub, which we are in the habit of despising, and which is only used by the chance passenger, occasionally plucking its fruit, possesses, however, several advantages which deserve our attention. Its roots, when dried in the shade, cut into small fragments, and taken in the shape of a weak infusion, form one of the best specifics against obstinate coughs. Its long branches can in cases of need be used as cords, and its fruit produces an excellent wine, the mode of making which is as follows: "Five measures of the ripe fruit, with one of honey, and six of wine, are taken and boiled, the froth is skimmed off, the fire removed, and the mixture being passed through a linen cloth, is left to ferment. It is then boiled anew, and allowed to ferment in a suitable cask. In Provence, bramble-berries are used to give a deep color to particular wines"—[From the German.]

THE TURNIP FLY.—In an address before the Northamptonshire Farming and Grazing Society, we find it recommended to collect small heaps of rubbish around the turnip-patch, and

in two or three days after sowing, to set one or more of them on fire, first having sprinkled some sulphur on them. The wind will carry the smoke over the patch, and either kill or drive away the turnip fly.

FLESH COLORED CLOVER—*TRIFOLIUM INCARNATUM*.—This grass, as an object of field culture, was, within a few years, brought to the notice of the British public by two English tourists reporting what they had seen in Germany. Two acres, sown on stiff red clay in the middle of April. "The spring was exceedingly dry, and yet it was fit for cutting in six weeks after it had been sown, and a most luxuriant crop it was."

M. Dombarle states in the *Annales Agricoles de Revier*, that he has had five years' experience in cultivating it, and considers it of the highest value. It is an annual, and gives only one cut, yet this one is equal to two of red clover. It is not fastidious as to soil—stands the winters of the North of France, and is usually sown in August and September. "The quantity of seed is about twenty-five ounces per acre." The British code of agriculture states, that "it produces two excellent crops in one year, the first of which should be cut as soon as it comes into flower, and the second will produce a considerable quantity of seed. From a communication in the *New-England Farmer*, of Dec. 4, 1833, by the Honorable John Lowell, we make the following extract. Speaking of seed presented to the Mass. Horticultural Society, by the Honorable Thomas H. Perkins, he says,

"I sowed it about the last week of April. It was in bloom and fit to cut in fifty days. It is not so coarse as Dutch red clover, better furnished with leaves, not liable to lodge or lose its leaves in drying. It furnished a fair second crop in the late uncommon dry season."

"From its rapid growth I think it of great value for an early crop, for soiling in summer, or for supplying food when other grasses are winter killed."

"It is only an annual grass, and therefore can be of no use but for these occasional purposes; but for milk farms to supply the market, or for small dairies on estates round great towns, I think it promises to be highly useful. I have requested my friend Mr. Perkins to import fifty pounds, for myself and a friend, and he has ordered a quantity for himself, which are now on their passage. We shall be able to make a more extensive trial next summer, the result of which will be made known."

The seed may be had of H. Huxley & Co. No. 81 Barclay street, New-York; and of W. R. Prince, Flushing, New-York. One of the writers remarks that care should be had to obtain good seed, and not to sow it too deep.

DRAFTING SHEEP.—Good management of sheep and lambs requires several drafts.

"The next drafting takes place among the fat sheep in Spring which had been fed on turnips. If they are to be sold on the ground to a dealer, a few of the worst should be drafted, and sold separately, otherwise they will assuredly be made the occasion of lowering the price of the rest; and if they are destined for a public weekly market, more care is necessary for the proper assortment of them. They will have to be put into lots of half a score, or a score, according to their strength or number, and each lot marked by a distinct mark on the wool with red or blue paint."

THRASHING.—In some of the parishes of England, flails are substituted for machines—supposing them, all things considered, cheaper.

SALT.—Fine particles of salt soften the most stubborn soils, and enable the farmer to till them in the driest weather.

CATTLE IN ENGLAND.—Our readers have an example in the following extract, of the great increase that is given to human sustenance by improvements in live stock :

A century ago, our cattle, from the inferiority of their food, were not one-half, sometimes even not one-third, of the present weight. It is computed that England and Wales now contain, at least, five millions of oxen, and a million and a half of horses, of which about a million are used in husbandry, 200,000 for pleasure, and 300,000 are colts and breeding mares. The number of sheep is about twenty millions, and eight million lambs. The number of long-wooled sheep, is about five millions, their fleeces averaging 7 to 8 lbs.; and of short-wooled sheep fifteen millions, the weight of fleece averaging from 3 to 3½ lbs. The whole quantity annually shorn in England is from eighty to eighty-five millions of pounds. The Merinos were introduced about the beginning of the present century, and were imported in large numbers after our alliance with Spain in 1809. The great pasturage counties are Leicester, Northampton, Lincoln, and Somerset; and for butter and cheese, Cheshire, Gloucestershire, and Wiltshire. The import of butter and cheese from foreign countries is checked by duties, but these are important articles of Irish commerce with England.

Cultivation of Silk at Mansfield, Connecticut.
By B. STORRS. To the Editor of the New-York Farmer.

MANSFIELD CENTRE, Ct. Dec. 18, 1833.

DEAR SIR,—Yours of the 30th ult. has remained so long unanswered that you may think me indifferent to the subjects of your inquiry. Not so, sir; I feel a deep interest in the growing prosperity of our country, in its various and multiplied manufacturing establishments, which are constantly springing into existence, and in none more so than in the production and manufacture of silk; none which presents in my estimation greater encouragement, both to the agriculturist and the manufacturer—none which promises fairer to become of extensive utility and profit to this country.

With regard to the cultivation of the mulberry and the growing of silk in this place, it may not be generally known that the business has been successfully prosecuted here for more than seventy years; but, though gradually increasing during this period, there has been but very little improvements in the method of conducting the business, or in the application of the raw material to manufacturing purposes, any further than the production of sewing silk and twist, and this almost exclusively confined to the labor of the family, upon the domestic spinning-wheel. But one thing has been abundantly demonstrated; that is, that the white mulberry is easily cultivated, and that the rearing of the silk-worm, and the production of silk, notwithstanding all the particularity, minuteness, and mystery, with which the subject has been treated, and invested, may be profitably pursued, with but little more knowledge or care than is requisite for the successful rearing of pigs, or poultry. Shelter them from cold, storms and wind, and feed them when hungry, whether it be in a corn-house, barn, cider-mill house, or laboratory, built on purpose for the business, a profitable crop of silk may be produced. I would not by this remark be thought to undervalue enterprise and improvement, or to treat lightly particular attention to conveni-

ence and neatness in every branch of agriculture. I highly value all the associations and societies of the present day, formed for the advancement and improvement in knowledge of the mechanic and agriculturist; but describe to a person entirely unacquainted with the manner in which wool is produced, the animal which produces it, and inform him how this animal must be reared, fed, housed, and treated, according to the practice of some of our most wealthy and scientific farmers, its peculiar habits, and liability to disease in case of neglect, and he would be very apt to conclude, that, being unable to sustain the necessary expense, he might as well not attempt to rear an animal that required so much care and labor. So with regard to the rearing of the silk-worm, there is reason to fear that the minute particularity and delicate attention to temperature, food, cleanliness, &c. &c. with which the subject has been treated by most writers, may have deterred many from engaging in it; but let them be told, and truly too, that without thermometer, hot-house, stove-room, or laboratory, the silk-worm may be, at the proper season, hatched by the usual warmth of the kitchen; and that with a rough board to lie on, and a corn-house or barn to shelter them from wind and wet, guarded also from the depredations of rats, mice, and fowls, and well supplied with the white mulberry leaf, will produce a profitable crop of silk, they may be induced to try; and having once engaged in the business and found it practicable, may then attend to all the improvements which experience and sound wisdom may dictate. Many persons in this town, who have been for twenty or thirty years successfully engaged in the rearing of silk-worms, should you talk to them about thermometers, hot-houses, and laboratories, would not know what you meant; yet, I doubt not, a due attention to these may be profitable.

With regard to the manufacture of silk in this country, much is yet to be learned; but I consider the experiment as favorably commenced, and nothing more is wanting than that some of our enterprising and ingenious mechanics should give the subject that attention which its importance demands; and with such improvements in machinery, and the art of manufacturing, as I think the business susceptible, we may soon compete in this, as we do in some of our wool and cotton fabrics, with any portion of the world. I believe it to be a well established fact, that no part of the world now produces a better quality of the raw silk than that which is produced in this country. Since the investigation of the subject by a resolution of Congress, and the encouragement presented by the Legislature of this State, in a bounty upon the propagation of the white mulberry, and upon raw silk, the business has received a new impulse.

The Piedmont reel has been introduced, and with some improvement in the application of a stop motion. was the last season used to some extent, propelled by water and by horse power, as well as by hand, and our ingenious and industrious females find that, without any further instruction in this branch, they can, with the exercise of a little more patience than the old reel required, produce a much handsomer and more valuable article than by the former method. I have now by me a sample of a few ounces, reeled by one of our ladies, which I designed to have presented at the New-York Fair, and which I

think in every respect would compete with the production of any country. Thus far, then, I think we may safely say, we can and do succeed. We have also two small silk manufacturing establishments in this town, propelled by water power, in successful operation, at which single thrown silk, organzine, tram, and every kind of silk, is prepared with ease, by persons bred to the business. The machinery is made in the manner of the most approved English machinery. At these establishments all the silk raised in this vicinity, and reeled on the improved reel as before stated, finds a ready market. Some broad goods have been made, but the business seems not yet to be sufficiently matured to go immediately into the higher branches of manufacture, but must for a time be confined to the smaller and more common articles of silk fabrics. A great proportion of the silk now prepared at our factories here is made use of in the manufacture of the Tuscany grass bonnets.

Having extended my remarks to a much greater length than I anticipated, I will mention as an apology, that having seen most of the publications on the subject which have been circulated in this country in answer to the call of Congress for information, and being well acquainted with the perfectly simple manner in which the business has ever been conducted here, I felt that a plain statement of facts, similar to those I have here given, was necessary, to counteract in some measure the influence of that scientific minuteness with which the subject was treated in those publications, and might be of public utility. Should it appear to you that I am correct in this opinion, you are at liberty to make such use of this communication as you may think proper.

Another subject of your inquiry is, whether silk-worm eggs can be procured here, in reply to which, all I can say is, I have heretofore, when applied to, found no difficulty in obtaining them, to any extent called for, and presume there would be none now. The price, from 6 to 8 cents per thousand; and as they are attached to papers, those papers may be folded and packed in small boxes and sent safely to any part of the country by stage or otherwise.

When at New-York, last spring, I purchased a small lot of the *Morus Multicaulis*, for the purpose of introducing them into this silk-growing region. They flourished finely last summer, and if our winter climate does not prove too severe for them, bid fair to be an important acquisition to our silk growers. As I am frequently applied to from a distance for information with regard to the value of cocoons, and of the raw silk, I will here state that we have not as yet any extensive reeling establishments, but from the success which attended the trial of the Piedmont reel the last season, I think there is encouragement to enter extensively into the business, and that probably, by another season, such preparation will be made as to afford a ready sale for cocoons, at a fair price, which is now estimated by the bushel—say \$2.50 per bushel, for fair, to \$3.00 for best. The worth of the raw silk depends much on its being reeled clean, level, and fine. For the former I have paid the above prices for several lots which I purchased the last season, and for the raw silk have paid mostly from \$3.75 to \$4.00.

Respectfully, your obedient servant,

ZALMON STORRS.

NEW-YORK AMERICAN.

JANUARY 18--24, 1834.

LATER FROM EUROPE.—The George Washington, from Liverpool, brings us London papers of the 24th, and Liverpool of 26th November—ten days later than our previous accounts, though themselves 54 days old—while the latest Liverpool paper, that of 26th, announces the arrival there, of the Napoleon, in 16 days from this port.

We give from the London Spectator of the 23d a good summary of the news of the day, and add to it some details.

The quarrel in Spain is losing its interest. Neither party seems capable of any great effort; and it will probably drag on into a sort of guerilla warfare. Don Carlos still keeps concealed. The paper ruptures between the Queen Regent and Miguel signifies not much.

In Portugal the state of things is somewhat similar. Miguel, at Santarem, is so strongly posted that Pedro dares not attack him, though he has cut him off from some mills which supplied his forces with flour; but the whole country in his rear is open to him; that loss, therefore, will not be material; and if Pedro's troops are at all of the quality of those which formed a part of the detachment with which Captain Birt and his marines were acting, he shows his wisdom in not attempting any attack upon Santarem.

A quarrel, upon points of etiquette, is getting up between the self-made Soldier-King of Sweden, and the Citizen-King of the French. If in nothing else, than in the imitation of the follies of legitimacy—these new made Kings play their parts, as though they were born to them. The Bavarian Monarch, too, it seems, by the annexed article from Munich, is occupying his royal-leisure in prescribing the etiquette of the road. When the universal German mind is fermenting with thoughts and projects of equal rights and liberal institutions—such conduct as this seems really that of infatuation.

MUNICH, NOVEMBER 11.—On the 7th instant, an ordinance was published here, founded on a Ministerial rescript of the 29th of October. The first article of this ordinance forbids all carriages, no matter to whom they belong, and all riders on horseback, to pass carriages in which their Majesties are; and, when the King is on horseback, it is forbidden to pass or remain before his Majesty. The second article orders all carriages and horsemen, who may meet their Majesties, to draw up immediately, and halt till they have passed by.

In England rumors of changes in the Ministry were frequent: Lord Grey desires, it is supposed, to retire, and wishes, it is added, to make his son-in-law, Lord Durham, his successor as Premier. To this Lord Brougham, who looks to that station himself, objects. O'Connell has recommenced agitation in Ireland, having, as we presume, lost all hope of success from the Ministry.

[From the London Courier of 21st November.]

We notice in the French Papers, too, a statement that the celebrated naturalist, M. Geoffroy St. Hilaire, the President of the Academy of Sciences, was disposed to concede to M. Raspail a prize of 10,000 francs for his new system of organic chemistry, on some condition of his confining his attention to science; but the Minister, M. Guizot, interfered, and prevented it, on account of M. Raspail being, politically speaking, a dangerous citizen.—The Academy submitted to the minister's decision, not to the judgment of the man of science.

[From the London Spectator of 23d November.]

PORTUGAL.—The war in Portugal is carried on with little spirit: there is a strong disinclination to fight, on both sides. The Miguelite army remains within the Walls of Santarem; and Pedro seems to be destitute of the means of attacking it with any probability of success. He ordered a portion of his force to be drawn up below the town, by way of bravado, or in order to ascertain whether the enemy would have the folly to leave their fortifications and fight in the open plain; but the Miguelite General only laughed at him, and his troops did not move a foot.

On the 2d instant, however, there was a little fighting at Alcaer de Sal, a small town near St. Ubes, garrisoned by a detachment of the Pedroite army, consisting of about 1,000 Lisbon Militia and 150 English and Portuguese Marines. The Miguelites, in number about 1,500, under the command of Colonel Lemos, made an attack upon them early in the morning. The following account of what then took place is extracted from a letter written to Admiral Napier by Captain Birt, who commanded the Marines.

"The English and Portuguese Marines under my command were stationed in front of the Constitutional troops as skirmishers, and kept the enemy at bay till the cavalry charged them in three squadrons; when we immediately formed into a square, and twice repulsed them with great loss. We then prepared to charge a column of infantry, who were advancing; but the Portuguese Volunteers and 9th infantry, who were stationed in our rear, seeing the determined manner in which we were attacked, betook themselves to rapid flight, without firing a shot, leaving my men with some of the Portuguese Marines to do the best we could; when, finding ourselves overpowered by numbers, we commenced our retreat, keeping the enemy at bay, and covering the flight of the Portuguese. I tried to persuade the Colonel commanding our troops (who asked my opinion) to retire to a convent, a strong position on our right, at which place we might have made a good stand. Instead of doing this, he led to the marshes beside the river; and here the scene was beyond description; the whole country was strewn with arms and accoutrements, which the Volunteers threw away in their flight, and the enemy's cavalry closing on them, hewed them down in all directions. I kept my men together, and made good my retreat to the side of the river, with the loss of only three men; but on coming to the river, for want of boats (the Portuguese troops having taken all) the men were obliged to throw away their arms and accoutrements, and swim across under a heavy fire of musketry, who lined the north bank in this place. I am sorry to say my loss was great, in consequence, I fear, of some of the officers and men breaking off to the right, and attempting to pass the river lower down. They were all cut off.

The Captain adds, that the Portuguese Colonel lost all command, and gave himself up to the enemy; that a great number of the volunteers also passed, crying "Viva Don Miguel!" And that the Pedroites loss in killed, and prisoners, could not be less than 800 men. Admiral Napier, in a letter to the Minister of Marine, recapitulates Captain Birt's account of the affair; and says, that of the troops engaged on the Queen's side, he hears that "200 are at Palmella, 100 are at St. Ubes, and as for the rest, God knows where they are."

If Don Pedro's army is composed to any extent of his Lisbon levies, it is not surprising that he hesitates to attack Santarem. He had better have treated his British recruits, who lately returned in the James Watt, full of disgust and without pay, with good faith and common humanity.

SPAIN.—Mr. Villiers formally presented his credentials to the Queen Regent at Madrid on the 6th instant. Until then, Lord William Harvey had figured as the official representative or Chargé d'Affaires. At Madrid, and throughout the Southern provinces of the kingdom, the Queen's authority is undisturbed. The partisans of the Pretender are treated with some harshness.

In the Northern provinces, Carlism seems to prosper: the insurgents have driven the Queen's troops from Irun; and have thus closed another line of communication to Madrid. General Saarsfield, of whose march upon Vittoria and expected demolition of the rebels so many reports have been current, was still at Burgos, when the latest accounts left Bayonne, seven days ago. Preparations are making to supply St. Sebastian with provisions, and a number of Constitutionals have arrived there, to augment the garrison, which is weak and not well provided. There has been a rising in Valencia; the principal town in the province, San Philippe, having proclaimed Don Carlos; but it appears to have been speedily suppressed.

General Quesada, who commands the Queen's troops, at Valladolid, has issued his proclamation to the inhabitants of Old Castile. "It breathes," says the Courier, "a fierce, uncompromising war against the denounced monks and their supporters. Such sentiments must make every man apprehensive that war in Spain, instead of being a mere contest for a throne, can be nothing less than a war of extermination."

FRANCE.—The French Liberals have altered their

tone respecting the interference of their Government in the affairs of Spain. A short time ago, they were eager for the despatch of an army to support the Queen and suppress the Carlists. But they have since discovered, that the support of the Queen may be a very different affair from the establishment of a Liberal government; and have a reasonable dread that French arms, if used at all, would be for the benefit of Absolutism, or at least, what they abominate nearly as much, the system of the Juste Milieu. Now, therefore, they would prefer to assist the Queen with a loan of money; which would probably answer her Majesty's purpose much better than an auxiliary army of Frenchmen. According to present appearances, Louis Philip will do neither one nor the other.

BELGIUM.—King Leopold's concerns proceed smoothly. The addresses in reply to his speech were passed unanimously by both Chambers; and it is said that the session is likely to be one of little speechifying and much business. Count Dietrichstein, the Austrian, and Count d'Arnheim, the Prussian Ambassador, have reached Brussels. The latter is already very active in his endeavors to form a commercial treaty, the real object of which is to exclude British manufactures from the Continent. Great inducements, it is said, will be held out to the Belgian manufacturers to become parties to the Prussian system.

TURKEY.—There is a solitary piece of news from Constantinople, but that is important if true: the combined English and French squadrons have entered the Dardanelles, in spite of the recent treaty between Russia and Turkey, by which such entry was forbidden. This is a proper and spirited proceeding, and we hope that the information of the Standard, from whom we copy the news, may prove to be correct. It is far better to show at once our perfect contempt for the treaty, in this way, than get entangled in the diplomatic net of endless negotiation with a view to alter it.

IRELAND.—Having completed our budget of foreign intelligence, we turn to the far more interesting and important affairs of the Sister Isle; where, after an interval of comparative calm, the storm which we have seen gathering for some weeks past, has at length burst forth, and promises to rage with the accustomed fury of the season. It is to be hoped that the pilots to whose guidance the state vessel is consigned, are blessed with steady hands and stout hearts, for verily they will need them.

Mr. O'Connell made his appearance at the Four Courts in Dublin on Saturday last; and, with the apparent determination not to lose a moment's time, walked to his old arena, the Corn Exchange; where he drew up and signed a requisition for a public meeting to petition against Tithes and for the Repeal of the Union. This is his first step of renewed agitation in Dublin; which he has declared shall be kept up with unusual energy; and there is every reason to believe that he will keep his word.

LISBON, Nov. 16.—Very little has been done here in the military way for this last week. The contending parties continue nearly in the same positions. On the 10th instant about 6,000 men advanced towards Pernes, from Cartaxo, to destroy the mills in that neighbourhood, which supply Santarem with flour. The Miguelites, 800 in number, retired on their approach, and the Pedroites, after effecting their object, returned to their old quarters. They are drawing their line somewhat closer to Santarem; but the communication is still open with the country in the direction of Abrantes, Coimbra, and Alentejo, so that they get in provisions in abundance. Guerilla parties are going about in all directions, accompanied by a few soldiers, who forward whatever provisions they can collect to Santarem. Unless Don Pedro can send up near 10,000 men more he will not be able, effectually, to encircle the town, and of course, it will be folly to calculate on starving them out, when almost the whole country is open to them.—On the 11th inst. the inhabitants came from Alagalla, in a great hurry, as the Miguelites were drawing near the town; however, they did not enter it, as they were only in quest of cattle, and drove off about 400 head. The Miguelites who took Alcaer remain still in the neighbourhood; they did not venture to advance on St. Ubes, and the garrison is now so much increased that they will get a warm reception; had they pushed forward after the engagement at Alcaer, it was apprehended they might have effected an entry. Admiral Napier carried 400 men thither in a steamer, on the 12th, and the sailors were landed from the Donna Maria armed with pistols and boarding pikes. Napier has not since returned, and it is thought that he will take the command of an expedition to Algarve.

PURE AND WHOLESOME WATER.—This evening the Report of the Commissioners, and of their Engineer, Major Douglass, is to be canvassed by the Board of Aldermen. We hope this important topic will be approached in a proper and liberal spirit, and with an eye to the future demands, as well as present great and urgent wants of this city.

The careful and elaborate surveys made by Major Douglass, of the whole ground between the Croton river and this city, and of all the various sources whence, it was supposed, at different times, a supply of water might be derived, present the matter fully to the Board. To them it belongs to decide whether they will sanction a plan which is certain, permanent, and adequate to the future as well as present demands, and of which the utmost cost is fully set forth, and ascertained—or whether they will fritter away in doubtful experiments, and at eventually greater ultimate expense, both time and resources.

The noble aqueduct proposed by Major Douglass is, we are persuaded, the only effective, as it is the only worthy plan. We have heard no single objection to it but the apprehension that the stream might freeze. When, however, it is considered that by the descent obtained, the water at the passage of Harlem river, (the most exposed point) will run at the rate of 125 feet per minute, and in a stream varying from 4 to 6 feet in depth, there does not seem much to apprehend on the score of frost. As to the substitution of iron pipes, it is preposterous. No single line of pipes of any dimensions yet made, could supply even present wants, and the expense of several lines would be much greater than that of the aqueduct, with less certainty of result and durability. Our own thorough conviction is, that the plan of Major Douglass will, if carried out, both fulfil all expectations, and in the facilities which it will furnish to the city, not only pay for itself, but constitute a valuable source of municipal revenue.

Another Steamboat Accident.—It will be seen by the following extract from the report of the steamer Orleans, which arrived at New Orleans on the 31st ult., that the steamer Telegraph, trading from that port to Bayou Tunica, has been lost, together with the greater part of the cargo. The extract is furnished by the New Orleans Courier:

"On the night of the 27th instant, at 7 o'clock, in the bonds near the Palmyra Islands, came in contact with the steamer Telegraph, Capt. Prior. The concussion was such that she sunk in 10 minutes in three and a half fathoms water, during which time all her passengers and crew were taken from on board by us. In about three hours afterwards, the Cincinnati and North Alabamian came alongside, affording an opportunity to the passengers to proceed: of which they all availed themselves, with the exception of a few who remained on board. Shortly after both boats left the wreck. In about six hours, with the assistance of Capt. Prior and his crew, we succeeded in saving a considerable quantity of the passengers' baggage, and some of the cabin furniture. The Cincinnati brought from a neighboring wood-yard, where she heard of the disaster, a good flat boat which was left with Capt. Prior for the purpose of attending on the wreck.

Great Gale at Buffalo.—A letter from Buffalo, dated the 13th inst., furnishes the following particulars of a gale of unprecedented violence at that place. Between 4 and 5 o'clock yesterday afternoon commenced the severest gale of wind that ever visited the city, or that is known by the oldest inhabitants of Buffalo, and continued until near daylight this morning before it abated, blowing down chimneys, unroofing buildings, upsetting carriages, and blowing in windows, doors, &c. &c. It now blows a gale, and the water is 4 feet lower than it was at 3 o'clock this morning. The ice is within 10 rods of my house on Crow street. The following is a brief history of the damage:

The road is completely blockaded from the foot of Main street to the Ferry, with ice and wood and lumber. The stages have to go west through the Indian village. The water was six inches deep in Willard's store. The wharves are much injured the whole length of the creek. Some vessels broke loose from their moorings. The starboard wheel house of the steam boat N. York was blown off. A Eaton's wharf

is materially damaged. The chimneys and battlements of the Commercial Buildings are blown down, and the roofs broken in. The south end of the block on Main street is badly injured. A part of the balustrade on the Mansion House is gone. Taylor's and Hedgus on the Terrace, battlements and chimneys are gone. Elners', on the corner of Main and Seneca streets, completely unroofed. Case's Farmer's Hotel, three chimneys and battlements down. The brick front of Wilgus', on the east side of Main-st. is gone. Chimney and battlements of L. H. Pratt and the Journal office, blown down, broke through the roof and two floors below. A. and A. Raynor's roof broke in and fell to the second story; where it was propped with timbers to the risk of many lives.

The battlements, chimneys and part of the roof of Rathbun's Cremlin buildings are blow off. Some of the windows of the Baptist church blown in. All the windows of the Congregationalist's church, broken in fronting the court house square, and some on the east side. On Seneca-street, Heywood's chimneys off and Doughty's house caved in. The county poor house is unroofed and about 50 inmates unprovided for, &c. &c.—[Albany Argus.]

[From the Albany Argus.]

CANAL TOLLS.—The Canal Board have had a special meeting for the purpose of regulating the Canal tolls, and the rates are published at this early day, for the information of those who are interested in the subject.

The rates of toll upon merchandize have been reduced 25 per cent.; upon flour, salted beef and pork, butter and cheese, beer and cider, the reduction is 10 per cent.; on timber, square and round, carried in boats, the toll is reduced 50 per cent.; sawed lumber, carried in boats, is reduced from 10 to 6 mills per 1000 feet per mile. Those who are familiar with the old rates will perceive that there has been a very general reduction in the rates of toll. On most articles, the produce of the country, as well as on merchandize, the tolls by the present reduction are brought within a fraction of the constitutional minimum.

The toll upon foreign salt has been reduced from 5 to 3 cents per 1000 pounds per mile. Previous to 1831, the toll upon foreign salt was one cent and four mills. In consequence of the reduction by Congress of the United States duty, the Canal Board, in 1831, raised the toll upon foreign salt from one cent, and four mills to ten cents per 1000 pounds per mile. The constitution having been altered so as to enable the Legislature to reduce the State duty upon each bushel of salt from 12 1/2 to 6 cents, the Canal Board have modified the rates of toll upon foreign salt.

RATES OF TOLL.

At a meeting of the Canal Board, at the Comptroller's Office, in the city of Albany, on the 13th January, 1831, the following rates of toll were established, in lieu of all rates heretofore established by this Board:—

No.	Provisions.	cts. m. fr.
1.	On flour, salted beef and pork, butter and cheese, beer and cider, per 1000 pounds per mile.....	0 4 5
2.	On bran and ship stuffs in bulk, per 1000 pounds per mile.....	0 4 5
3.	On salt manufactured in this state, per 1000 lbs. per mile.....	0 2 3
4.	On foreign salt, 1000 pounds per mile.....	3 0 0
5.	On gypsum, the product of this state, per 1000 pounds, per mile.....	0 2 5
6.	On brick, sand, lime, clay, earth, leached ashes, manure and iron ore, per 1000 pounds per mile.....	0 2 5
7.	On pot and pearl ashes, kelp, mineral coal, charcoal, pig iron, broken castings and scrap iron, per 1000 pounds per mile.....	0 4 5
8.	On stove, and all other castings, going to or from tide water, per 1000 pounds per mile.....	0 5 0
9.	On copperas and magnesia, going towards tide water, per 1000 pounds per mile.....	0 5 0
10.	On bar and pig lead, going towards tide water, per 1000 pounds, per mile.....	0 4 5
11.	On furs and peltry (except deer, buffalo and moose skins) per 1000 pounds per mile.....	1 4 0
12.	On deer, buffalo and moose skins, per 1000 lbs. per mile.....	0 7 0
13.	On ship skins and other raw hides of domestic animals of the United States, per 1000 lbs. per mile.....	0 4 5
14.	On imported raw hides of domestic and other animals, per 1000 pounds per mile.....	0 9 0
15.	On household furniture, accompanied by, and actually belonging to, families emigrating, per 1000 pounds per mile.....	0 5 0
16.	On carts, wagons, sleighs, ploughs and mechanical tools, necessary for the owner's individual use, when accompanied by the owner, emigrating for the purpose of settlement, per 1000 pounds per mile.....	0 5 0
17.	On slate and tile for roofing, and stone ware, per 1000 pounds per mile.....	0 5 0
18.	On all stone, wrought or unwrought, per 1000 pounds per mile.....	0 2 5
19.	On timber, squared and round, per 100 cubic feet, per mile, carried in boats.....	0 5 0
20.	On the same, if carried in rafts, per 100 cubic feet per mile.....	1 5 0
21.	On boards, plank, scantling, and sawed timber,	

reduced to inch measure, and all sliding, lath, and other sawed stuff less than 1 inch thick, carried in boats, (except such as is enumerated in regulations, Nov. 23 and 32,) per 1000 feet per mile.....	0 6 0
22. On the same, if transported in rafts, per 1000 feet per mile.....	2 0 0
23. On sawed lath of less than five feet in length, split lath, hoop poles, rowing cars and broom handles, per 1000 pounds per mile.....	0 2 5
24. On staves and heading, transported in boats, per 1000 pounds per mile.....	0 2 0
25. On the same, if transported in rafts, per 1000 pounds per mile.....	0 5 0
26. On shingles per M. per mile, carried in boats.....	0 2 0
27. On the same, if conveyed in rafts, per M. per mile.....	0 4 0
28. On split posts, and rails for fencing, per M. per mile, carried in boats, and rafts for fencing, per M. per mile.....	2 0 0
29. On the same, if conveyed in rafts, per M. per mile.....	8 0 0
30. On wood for fuel (except such as may be used in the manufacture of salt, which shall be exempt from toll,) and tan bark, per cord per mile.....	1 0 0
31. On the same, if transported in rafts, per cord per mile.....	2 0 0
32. On sawed stuff for window blinds, not exceeding one fourth of an inch in thickness, per 1000 pounds per mile.....	0 5 0
33. On cotton, per 1000 pounds per mile.....	0 4 5
34. On live cattle, sheep and hogs, per 1000 pounds per mile.....	0 5 0
35. On horses, (and each horse when not weighed, to be computed at 1000 pounds, per 1000 pounds per mile.....	0 7 0
36. On rags per 1000 pounds per mile.....	0 4 5
37. On hemp and tobacco going towards tide water, per 1000 pound per mile.....	0 4 5
38. On hemp, going from tide water, per 1000 lbs. per mile.....	0 4 5
39. On wheat and all other agricultural productions of the United States, not particularly specified, and not being merchandize, per 1000 lbs. per mile.....	0 4 5
40. On merchandize.....	0 9 0

Articles not enumerated.

41. On all articles not enumerated or excepted, passing from tide water, per 1000 pounds per mile.....	0 9 0
42. On all articles not enumerated or excepted, passing towards tide water, per 1000 pounds per mile.....	0 4 5

Boats and Passengers.

43. On boats used chiefly for the transportation of persons and navigating the Erie canal between Schenectady and Utica, per mile.....	11 0 0
44. On boats used chiefly for the transportation of persons, and navigating the Erie canal west of Utica, per mile.....	6 0 0
45. On boats used chiefly for the transportation of persons, and navigating the Champlain or Champlain and Junction canal, per mile.....	6 0 0
46. On boats used chiefly for the transportation of persons, and navigating the Oswego canal, per mile.....	6 0 0
47. On boats used chiefly for the transportation of persons, and navigating the Cayuga and Seneca canal, and the lateral canal to East Cayuga Village, or either of them, per mile.....	6 0 0
48. On boats used chiefly for the transportation of persons, and navigating the Junction canal, and not connected with regular lines of boats for the transportation of persons on the Erie or Champlain canals, per mile.....	50 0 0
49. On boats used chiefly for the transportation of property, per mile.....	2 0 0
50. On each person over eight years of age, transported in a boat used chiefly for the transportation of persons, per mile.....	0 2 0
51. On each person over 12 years of age, transported in a boat used chiefly for the transportation of property, per mile.....	0 2 0

Resolved; That the foregoing rates of toll be, and they are hereby established; and that the same be hereafter charged and collected on the several canals of this state, in lieu of all rates of toll heretofore established upon any or either of the said canals, or any part thereof.

STEPHEN VAN RENSSELAER,
SAMUEL YOUNG,
WILLIAM C. BOUCK,
JONAS EARLL, JR.,
MICHAEL HOFFMAN,
Canal Commissioners.

A. C. FLAGG,
JOHN A. DIX,
GREENE C. BRONSON,
A. KEYSER,
SIMEON DE WITT,
Commissioners of the Canal Fund.

[COMMUNICATED.]

A pair of silver pitchers, to be presented by the citizens of Brooklyn to Commodore Chauncey, are just finished by Gardner corner of Broadway and Liberty street, where they will remain, and may be seen for two or three days.

Appointments by the Governor and Senate—
TUESDAY, JANUARY 14.

Jonathan D. Stevenson, of the city of New York, inspector of leaf tobacco for said city, in place of Wm. Simpson, whose term of office has expired.

SATURDAY, JAN. 18.—Wm. C. Haggerty, of New York, to be auctioneer in the place of John F. Adriance, resigned.

Two of the buildings, connected with one of the Powder Mills, belonging to Loomis, Hazard & Co. in Manchester, Connecticut, were blown up on the 20th instant, (the cracking works and dry house.) Six men were killed, viz. John Rockwell, and Daniel Avery, of East Windsor; Mr. Giles, and

Mr. Bivins, of Hartford; Harvy Fox, of Bolton; Mr. Allen, of New-York—loss of property small; cause of the explosion, unknown.—(Gazette.)

JACQUELINE.

"Death lies on her, like an untimely frost
Upon the sweetest flower of all the field."

"Dear mother—is it not the bell I hear?"

"Yes, my child: the bell for morning prayers. It is Sunday to-day."

"I had forgotten it. But now all days are alike to me. Hark! it sounds again—louder—louder. Open the window, for I love the sound. There; the sunshine and the fresh morning air revive me. And the church bell—oh, mother—it reminds me of the holy Sabbath mornings by the Loire: so calm, so hushed, so beautiful! Now give me my prayer-book, and draw the curtain back that I may see the green trees and the church spire. I feel better to-day, dear mother."

It was a bright, cloudless morning in August. The dew still glistened on the trees, and a slight breeze wafted to the sick chamber of Jacqueline the song of the birds, the rustle of the leaves, and the solemn chime of the church-bells. She had been raised up in bed, and reclining upon the pillow, was gazing wistfully upon the quiet scene without. Her mother gave her the prayer book, and then turned away to hide a tear that stole down her cheek.

At length the bells ceased. Jacqueline crossed herself, kissed a pearl crucifix that hung around her neck, and opened the silver clasps of her missal. For a time, she seemed wholly absorbed in her devotions. Her lips moved—but no sound was audible. At intervals the solemn voice of the priest was heard at a distance, and then the confused responses of the congregation, dying away in inarticulate murmurs. Ere long, the thrilling chant of the Catholic service broke upon the ear. At first it was low, solemn and indistinct; then it became more earnest and entreating, as if interceding, and imploring pardon for sin; and then arose louder and louder, full, harmonious, and majestic, as it wafted the song of praise to heaven, and suddenly ceased. Then the sweet tones of the organ were heard—trembling, thrilling, and rising higher and higher, and filling the whole air with their rich melodious music. What exquisite accords!—what noble harmonies!—what touching pathos! The soul of the sick girl seemed to kindle into more ardent devotion, and to be wrapt away to heaven in the full harmonious chorus, as it swelled onward, doubling and redoubling, and rolling upward in a full burst of rapturous devotion!—Then all was hushed again. Once more the low sound of the bell smote the air, and announced the elevation of the host. The invalid seemed entranced in prayer. Her book had fallen beside her—her eyes closed—her soul retired within its secret chambers. Then a more triumphant peal of bells arose. The tears gushed from her closed and swollen eye-lids; her cheek was flushed; she opened her dark eyes and fixed them, with a deep expression of adoration and penitence, upon an image of the Saviour on the cross, which hung at the foot of her bed, and her lips again moved in prayer. Her countenance expressed the deepest resignation. She seemed to ask only that she might die in peace, and go to the bosom of her Redeemer.

The mother was kneeling by the window, with her face concealed in the folds of the curtain. She arose, and going to the bedside of her child, threw her arms around her, and burst into tears.

"My dear mother, I shall not live long—I feel it here. This piercing pain—at times it seizes me, and I cannot—breathe."

"My child, you will be better soon."

"Yes, mother, I shall be better soon. All tears, and pain and sorrow, will be over. The Hymn of Adoration and Entreaty, I have just heard, I shall never hear again on earth. Next Sabbath, mother, kneel again by that window as to-day. I shall not be here, upon this bed of pain and sickness; but when you hear the solemn Hymn of worship and the beseeching tones that wing the spirit up to God; think, mother, that I am there—with my sweet sister, who has gone before us—kneeling at our Saviour's feet, and happy—Oh, how happy!"

The afflicted mother made no reply,—her heart was too full to speak.

"You, remember, mother, how calmly Amie died. Poor child, she was so young and beautiful!—I always pray, that I may die as she did. I do not fear death as I did before she was taken from us. But, oh—this pain—this cruel pain—it seems to draw my mind back from heaven. When it leaves me I shall die in peace."

"My poor child!—God's holy will be done!"

The invalid soon sank into a quiet slumber. The excitement was over, and exhausted nature sought relief in sleep.

The persons between whom this scene passed, were a widow and her sick daughter, from the neighborhood of Tours. They had left the banks of the Loire to consult the more experienced physicians of the metropolis, and had been directed to the *Maison de Sante*, at Auteuil, for the benefit of the pure air. But all in vain. The health of the suffering, but uncomplaining patient, grew worse and worse, and it soon became evident that the closing scene was drawing near.

Of this, Jacqueline herself seemed conscious; and towards evening, expressed a wish to receive the last sacraments of the church. A priest was sent for; and ere long, the tinkling of a little bell in the street announced his approach. He bore in his hand a silver vase containing the consecrated wafers, and a small vessel, filled with the holy oil of the extreme unction, hung from his neck. Before him walked a boy carrying a little bell, whose sound announced the passing of these symbols of the Catholic faith. In the rear, a few of the villagers, bearing lighted wax tapers, formed a short and melancholy procession. They soon entered the sick chamber, and the glimmer of the tapers mingled with the red light of the setting sun, that shot his farewell rays through the open window. The vessel of oil, and the vase containing the consecrated wafers, were placed upon a table in front of a crucifix that hung upon the wall, and all present, except the priest, threw themselves upon their knees. The priest then approached the bed of the dying girl, and said in a slow and solemn tone:

"The King of Kings and Lord of Lords has passed thy threshold. Is thy spirit ready to receive him?"

"It is, father."

"Hast thou confessed thy sins?"

"Holy father, no."

"Confess thyself, then, that thy sins may be forgiven, and thy name recorded in the book of life."

And, turning to the kneeling crowd around, he waved his hand for them to retire, and was left alone with the sick girl. He seated himself beside her pillow, and the subdued whisper of the confession mingled with the murmur of the evening air, which lifted the heavy folds of the curtains and stole in upon the holy scene. Poor Jacqueline had few sins to confess—a secret thought or two towards the pleasures and delights of the world—a wish to live, unuttered, but which to the eye of her self-accusing spirit seemed to resist the wise providence of God: no more. The confession of a meek and lowly heart is soon made. The door was again opened; the attendants entered, and knelt around the bed, and the priest proceeded:—

"And now prepare thyself to receive, with contrite heart, the body of our blessed Lord and Redeemer. Dost thou believe that our Lord Jesus Christ was conceived by the Holy Spirit, and born of the Virgin Mary?"

"I believe."

"And all present joined in the solemn response—"

"I believe."

"Dost thou believe that the Father is God, that the Son is God, and that the Holy Spirit is God—three persons and one God?"

"I believe."

"Dost thou believe that the Son is seated on the right hand of the Majesty on high, whence he shall come to judge the quick and the dead?"

"I believe."

"Dost thou believe that by the holy sacrament of the church, thy sins are forgiven thee, and that thus thou art made worthy of eternal life?"

"I believe."

"Dost thou pardon, with all thy heart, all who have offended thee, in thought, word, or deed?"

"I pardon them."

"And dost thou ask pardon of God and thy neighbor for all offences thou hast committed against them, either in thought, word or deed?"

"I do."

"Then repeat after me; O, Lord Jesus, I am not worthy, nor do I merit, that thy divine Majesty should enter this poor tenement of clay; but according to thy holy promises be my sins forgiven, and my soul washed white from all transgression."

Then taking a consecrated wafer from the vase, he placed it between the lips of the dying girl, and while the assistant sounded the little silver bell, said:—

"*Corpus Domini nostri Jesu Christi custodiat animam tuam in vitam eternam.*"

And the kneeling crowd, smote their breasts, and responded in one solemn voice:—

"Amen!"

The priest then took from the silver box on the table a little golden rod, and dipping it in holy oil, anointed the invalid upon the hands, feet, and breast, in the form of the cross. When these ceremonies were completed, the priest and his attendants retired, leaving the mother alone with her dying child, who, from the exhaustion caused by the preceding scene, sunk into a death-like sleep.

"Between two worlds life hovered like a star,
Twixt night and morn upon the horizon's verge."

The long twilight of the summer evening stole on; the shadows deepened without, and the night-lamp glimmered feebly in the sick chamber; but still she slept. She was lying with her hands clasped upon her breast—her pallid cheek resting upon the pillow, and her bloodless lips apart but motionless and silent as the sleep of death. Not a breath interrupted the silence of her slumber. Not a movement of the heavy and sunken eye-lid—not a trembling of the lip—not a shadow on the marble brow told when the spirit, took its flight. It passed to a better world than this.

"There's a perpetual spring—perpetual youth;
No joint-numbing cold, nor scorching heat,
Famine, nor age, have any being there."

LITERARY NOTICES.

No. XI.

MONROE, M. T., Dec. 3, 1833.

The ride from Detroit hither is dull enough at this season of the year. The road leads through almost dead level, and the muddy streams creep over the fat black soil as if they had gormandised upon its rich vegetation till grown too lazy for locomotion. Among others, the Huron river, from which—seeing that it rises in one of the brightest and most beautiful lakes in the Peninsula—better things might be expected, waddles on to the lake as little excited by the flocks which frolic on its bosom as an Alderman after dinner by the flies that disport upon his jerkin. Occasionally, indeed, some bright little rill will ripple across the road, and smirch over its yellow pebbles on its way to the big lake, with much the same air that the mill streams of Long Island dance over the level ground while hurrying to the sea. But a wet prairie soon intervenes, and the innocent rivulet, like a child that is snubbed, becomes at once silent and sulky.—But though some parts of Wayne county are thus unattractive, I am told that other sections contain much arable land of excellent quality, consisting of sand loam and some clay with heavy timber, and occasionally fine bottoms along the streams. The population is about 8000.

The village of Monroe, in the county of the same name, from which I now write, is situated on the banks of the river Raisin, and about two miles from its entrance into Lake Erie. It was incorporated two years since, and comprizes a part of the old site of Frenchtown, celebrated, as you remember, in the annals of the last war. The place is said to be regularly laid out, but the most business part of it—and it is the fussiest little town in the world—looks as if the buildings had all been chucked from the other side of the river, and left to settle just where they might fall upon this. If the place continues to increase as rapidly, however, as it has during the last year—the population having doubled in that time—the inhabitants can afford to burn down the river side of the village and arrange it to more advantage. There are now about 150 houses, of which 20 or 30 are stone; some of them are wholesale establishments, and make a very handsome display of fancy goods. There are also two grist mills immediately in the town, a woolen factory, an iron foundry, several saw mills, a chair factory, a tannery, &c. And yet, notwithstanding the supply of water power affords every facility for the use of machinery, the demand for manual labor is very great, and mechanics of every kind may here, as in Detroit, find constant employment. Indeed, I am told, that the demand for mechanics in every part of Michigan, is excessive; and as for laborers, I have seen them repeatedly advertised for by written notices on tavern doors and elsewhere. The emigrants to the territory, I find, are generally people of a very respectable class, who have both the

disposition and the means to employ the services of others around them.

The "Bank of the River Raisin" is established at this place, with a capital of \$100,000; and though in its infancy, is said to be doing a very flourishing business. The notes are among the handsomest specimens of bank note engraving I have seen. There is also a Land Office established here, at which the sales of public lands since last April amount to upwards of \$22,000; the sales at Detroit and White Pigeon together a little exceeding this sum. The government price of land (\$100 for 80 acres) being the same in every part of the territory, this will give you some idea of the immigration into the Peninsula.

I must not forget to mention that with a population of only 1600 souls, five religious denominations are represented in their respective clergymen at Monroe, and that three of these, the Roman Catholic, Episcopal and Presbyterian, have each a neat Church of their own. I ought to add that a newspaper, with a good circulation, is printed here.

The advantageous position of Monroe, situated as it is at the head of Lake Erie, induced the government to make an appropriation for improving the harbor, which, except that of Maumee, is the only one at this part of the Lake. The lamented Major Maurice, of the Engineer Corps, (who, you may remember, fell down and instantly expired in the act of shaking hands with General Gratiot at Washington, last winter,) and whom the inhabitants of this place speak of with the tenderest remembrance—made minute surveys of the harbor and of the different channels of the river; and the bill which has been at various times introduced into Congress for their improvement was based upon his reports. A bill was passed at the last session of Congress appropriating \$8,000 for rebuilding the pier at the mouth of the river, and also appropriating the sum of \$20,000 for a road from La Plaisance bay, through which the Raisin debouches into Lake Erie, to intersect the Chicago road, which traverses the whole Peninsula, at a point about 40 miles from here; an improvement which will open a new market to Southern and Western Michigan, and contribute of course much to the prosperity of Monroe. A bill was also passed by both houses appropriating \$15,000 for a Canal connecting the waters of Lake Erie and the River Raisin by a cut across the bar at the mouth of the latter. The money has not been expended, however, in consequence of an oversight in the engrossing clerk, which from his omitting this important item, has prevented the bill as yet becoming a law. The monies appropriated for the pier and road have already been mostly expended, and those public works are now nearly completed under the active and efficient superintendence of Capt. Henry Smith, of the Engineer Corps. When all these improvements are completed, Monroe must come in for a large share of the immense trade and commerce which must flow through the three outlets of Eastern Michigan. The mouth of the Maumee can hardly compete with it on account of the extreme unhealthiness of that swampy region; but I am inclined to think that the enterprising inhabitants of this thriving little place are somewhat too vivacious in their expectations, when they think of not only rivaling, but outstripping, the ancient city of the Straits on the onward road to prosperity. Detroit, like every other point selected by the French on the Western waters of our country, is as commanding a position, whether for war or trade, as could be chosen.

The Monroites are however a driving people in their way. They are now building a steamboat of the largest class, which will cost not less than \$45,000, to ply directly between here and Buffalo, and this morning I saw launched a beautiful schooner, for the lake navigation. It was the first launch that had ever taken place at Monroe, and the occasion caused a general turn out of the inhabitants, who hurried to the spot a mile or two off upon horses of every variety of appearance. There was the bull-necked French pony and his scraggy looking Indian cousin, the sleek spongy looking Ohio horse and the clean-limbed quickly-gathering Kentuckian, galloping between the swift but shuffling Illinois pacer and the high-actioned tight looking New York trotter. Every one rode as if for a wager, and when we drew our reins the talk about horse-flesh superseded almost the interest in the schooner, showed that the Monroites, like Catalino and N. Purdy, deserve to be celebrated for their judgment in these matters. A very good and full band of Amateur Musicians composed of respectable private individuals of the village, came at last upon the ground, and changed the subject to the name of the new vessel which seemed to alter before launching, from the hackneyed one of Diana to the more characteristic sound of Tecumseh, the spot being so celebrated in the

memory of that great chief. "You know Tecumseh then sir," said I to an old gentleman, who, I was informed, had been field officer during the late war, and engaged in several battles. "I did sir, and he was as thorough a gentleman and as high toned an officer as any in the British service." The chief, you know, actually held his commission as a general officer immediately from the king. "What do you think then sir of his massacre upon this spot," I rejoined. "The barbarity of that act, sir, was only in accordance with Indian ideas of warfare. The disgrace of it attaches entirely to the English officer (Proctor) who permitted, perhaps sanctioned, the atrocity. The old officer's blood seemed to kindle anew as he dwelt upon that horrible slaughter of a force which had capitulated on honorable terms with a full reliance on the foe for protection. I asked him about the sick and wounded, who were burnt up in the hospital or shot to death as they ran shrieking through flames. "I saw their bones," he replied, when the ruins were still recent.—I came on with the corps of Kentuckians which advanced soon after into this country, and subsequently so eagerly avenged their countrymen at the battle of the Thames. I walked to the spot where the wounded met their fate, with several others. Richard M. Johnson was one of the number. We looked into the pit, and could see the charred bones and dismembered limbs and sometimes half burnt bodies, plainly below. The men muttered the deepest curses. Col. J. spoke not a word, but the tears rained from his eyes like water, and turning away, he exclaimed, "There lies the best blood in Kentucky, poured out like water." I have given as nearly as I can the very words of the veteran Colonel in describing this sad spectacle. Of the 700 young men murdered here, the greater part were students at law, young physicians, and merchants, and the sons of opulent farmers, and in short the very flower of the youth of Kentucky. The event threw the whole of that State into mourning. Speaking of the troops who were concerned in the early operations of these regions, I have heard a number of interesting accounts from different persons of the formation of the several corps. One of these, though I may very probably in trying to recall the particulars, confound them with the incidents of another, I will venture to repeat. A graduate of Williams's College, Massachusetts, who had been recently admitted to the bar, was riding through the State of Kentucky, perhaps with the design of finding some favorable point at which to fix his abode and commence the practice of his profession, when he was accosted near a village by a mounted traveller, who mentioning that he was a planter of the country, invited the young advocate with all the freedom of Western hospitality to dine at his house the following day. The invitation was accepted; and the Eastern gentleman arriving at the mansion of the unknown host, found a large party collected, the majority of which were well acquainted with each other, while many were strangers, like himself, and invited apparently in the same manner. The dinner however was got through with sociably enough; and by the time the glass began to circulate freely, all felt that easy confidence in the fellowship and good feeling of each other which is the soul of good society. The host then rising, described briefly the state of the Northwestern frontier, and produced a commission from his pocket to raise a corps and march at once thither. They enlisted to a man; their entertainer provided them on the spot with the necessary stores and munitions, and the band of volunteers started in a few hours on their march to the border.

The name of the noble host was not mentioned, but the Eastern adventurer, who was elected a Lieutenant upon the spot, and soon after became a Captain, was said to have been better known since as Colonel, General, Governor, and lastly Mr. Secretary Cass.

I regret now that I did not inquire into and note down the names and other particulars of a relation so striking, but you have the tale as it was told in my hearing, minus the admirable manner of the relation, but I am forgetting the Diana—that burst of music tells that she begins to move on her ways—calmly now she slides like a pair of Broqua's slippers through a quadrille, and now as that bottle of Champagne foams over her bow, her motion increases almost to the velocity of a gallop. She touches the water and the waves smoke like the pocket of Papa when his prettiest daughter is launched into society.—What a sensation does she make among the waves, and how do they coquet with her on every side. She bobs about till she seems as unstable as themselves. But now the sober Skipper, like a good husband, takes possession of her virgin charms, and placing himself at once at the helm, the unmeaning waters

cease their flirting, and sustain her above them without daring to attempt influencing her course. Diana, for one who has been "out" so short a time, may be said to have made "a good match," and become "a respectable member of society." To complete this truly Homeric parallel, I must add that she will "see company" at Buffalo in the spring.

The ride to these dock-yards is rather pleasant; But I have seen handsomer rivers than the Raisin. The banks for several miles around the village have been almost denuded of trees, and the limestone channel lets off so much of the stream through its crevices, that, like a tankard of liquor passed round at a tavern, it is half drunk up before it gets to its real owner, the lake. It would delight an eastern farmer though, to see the magnificent pear trees which, tall as the trees of the forest and containing a century of growth, extend through orchards for miles along the stream. Here, too, are apple trees, to the excellence of whose fruit I can testify, that were brought by the French to this country in 1731. The grape vines, too, from which the river takes its name, constitute a beautiful feature in the level landscape, as they hang in rich festoons along the banks of the stream, and climb wherever it is wooded to the tops of the loftiest elms.

There is now an application and great interest making to incorporate a company for the purpose of improving the navigation of the River Raisin and the Saline by a lock and dam navigation, an improvement which it is said can be now made at slight expense. The river flowing gently in its channel, with banks equally graded, seems ready to receive and freight upon its bosom the rich products of the country on its borders. By constructing a tow-path, the expense of which will not be heavy, an excellent canal can be easily made.

The subject of Canals and Railroads awakens at this moment the keenest interest in Michigan; and, after the route of the projected grand communication between Lakes Erie and Michigan, through the peninsula, shall be determined upon by the General Government, I have no doubt but that large and advantageous outlays of private capital upon similar works will be made at other points. Of the plans talked of as best worthy the attention of Government, that of a grand Railroad from Chicago to Detroit, with a lateral one perhaps to Monroe, seems to be considered as the least chimerical; though there are not a few who advocate a Canal immediately across the peninsula, in a direct line, from the mouth of the Maumee to Lake Michigan; and still a greater number who urge the construction of one from the mouth of the Raisin to that of the St. Joseph's, on the opposite side of the Peninsula—a route which would pass through a country acknowledged, I believe, to be the most fertile in Michigan. But another project still remains, as feasible, or perhaps more so, than either of the these. It is to connect the Washtenong or Grand river—a noble stream, which waters half the territory, and is navigable nearly 240 miles in bateaux—with the Huron, a fine stream, which after rising within a few miles of the sources of the Washtenong, empties into Lake Erie on the opposite side of the Peninsula. You can hardly form an idea of the relative importance and feasibility of these projects, without more knowledge of the territory of Michigan than is common at the east, where people generally know about as much of it as they do of Timbuctoo. I have already been so fortunate in my opportunities of talking with well informed people here, that I might venture at once to give you a general view of the country; but I prefer that you should gather whatever information I have to give from my own actual observations made along the road. With regard to scenery, I do not think, from what I have yet seen, I can promise you much; but for agricultural and mineral resources and for manufacturing and commercial advantages, I think I can produce some data, which, if they do not astonish our good people at home in regard to Michigan, will at least account for the immigrants here-pouring into the territory as they do, and believing it to be the garden of the Union. You must, however, pick up your information as I shall, by jogging along quietly with me through the country, and observing matters and things just as they come beneath our eyes. To-morrow I start for the interior. Farewell.

A TREATISE ON ASTRONOMY, BY SIR JOHN W. F. HERSCHEL, &c. &c.: Philadelphia, CAREY LEA & BLANCHARD.—This is an admirable book. It is the work of a master, and a very thorough master, of his lofty science, using his vast attainments and great powers of mind, to simplify and explain to unlearned disciples, the wonders, the truths, and the certain.

ies of astronomy. It is not, strictly speaking, an elementary book, for it assumes, necessarily, a partial knowledge, on the part of the student, of plain and spherical geometry and trigonometry; yet such is the precision of the language, and clearness of the descriptions employed, that with attention, an intelligent mind, though not possessed of this previous knowledge, will, we are quite satisfied, find no difficulty in comprehending and profiting by the instruction of this—again we repeat it—admirable volume.

OBSERVATIONS ON THE METEORS OF NOVEMBER LAST, by DENISON OLMSTED, *Prof. Math., Yale College.*—This paper, prepared for the forthcoming No. of Prof. Silliman's Journal of Arts and Sciences, but which has kindly been put into our hands in a separate shape, presents in a connected form all the various accounts of that wonderful phenomenon—the falling stars—which, according to the temper and wisdom of hearers, excited the admiration or alarm of the people of this continent and the adjacent isles.

It is however not yet finished, and to its sequel we shall look with interest for some rational and plausible theory, explanatory of so striking and rare an occurrence.

EUPHEMIA OF MESSINA; A TRAGEDY. Translated from the Italian of SILVIO PELLICO. New York: MONSON BANCROFT.—The name of Silvio Pellico would alone suffice to give to this publication general circulation. When to that is added the fact, that his tragedy is rendered into English blank verse, by one evidently master of both languages, and capable of entering into, and fully appreciating, the original, the success of the translation cannot be doubtful. We presume we are indebted for it to the same skillful and tasteful hand, which, in the American Monthly Magazine, so successfully treated the subject of Italian Poetry and Literature. We conclude our necessarily brief and hasty notice to-day, with the annexed extract from the New York Mirror:

[From the New York Mirror.]

DESCRIPTION OF A BALL ON BOARD THE FRIGATE UNITED STATES: by N. P. Willis.

Trieste.—The guns were run out of the ports; the main and mizen-masts were wound with red and white bunting; the capstan was railed with arms and wreathed with flowers; the wheel was tied with nosegays; the American eagle stood against the mainmast with a star of midshipmen's swords glittering above it; festoons of evergreens were laced through the rigging; the companion on way was arched with hoops of green leaves and roses; the decks were tastefully chalked; the Commodore's skylight was piled with cushions and covered with red damask for an ottoman; seats were laid along from one cannonade to the other; and the whole was enclosed with a temporary tent lined throughout with showy flags, and studded all over with bouquets of all the flowers of Illyria. Chandeliers made of bayonets, battle lanterns and candles in any quantity were disposed all over the hall. A splendid supper was set out on the gun-deck below, draped in with flags.—Our own and the Constellation's boats were to be at the pier at nine o'clock to bring off the ladies; and at noon every thing promised of the brightest.

First, about four in the afternoon, came up a saucy-looking cloud from the westernmost peak of the Friuli. Then followed from every point towards the north, an extending edge of a broad, solid black sheet which rose with the regularity of a curtain, and began to send down a wind upon us which made us look anxiously to our ballroom bowlines. The midshipmen were all forward, watching it from the fore-castle. The lieutenants were in the gangway, watching it from the ladder. The commodore looked seriously out of the larboard cabin port. It was as grave a ship's company as ever looked out for a shipwreck.

The country about Trieste is shaped like a bellows, and the city and harbor lie in the nose. They have a wind that comes down through the valley, called the "bora," which several times in a year is strong enough to lift people from their feet. We could see by the clouds of dust on the mountain roads, that it was coming. At six o'clock the shrouds began to creak; the white tops flew from the waves in showers of spray, and the roof of our sea-palace began to

shiver in the wind. There was no more hope. We had waited even too long. All hands were called to take down chandeliers, sword-stars and ottomans, and before it was half done, the storm was upon us, the bunting was flying and flapping, the nicely chalked decks were washed with rain, and strewn with leaves of flowers, and the whole structure, the taste and labor of the ship's company for two days, was a watery wreck.

Lieutenant C——, who had had the direction of the whole, was the officer of the deck. He sent for his pea-jacket, and leaving him to pace out his watch among the ruins of his imagination, we went below to get early to bed and forget our disappointment in sleep.

The next morning the sun rose without a veil.—The "blue Friuli" looked clear and fresh; the south-west wind came over softly from the shore of Italy, and we commenced retrieving our disaster with elastic spirit. Nothing had suffered seriously except the flowers, and boats were dispatched ashore for fresh supplies, while the awnings were lifted higher and wider than before, the bright-coloured flags replaced, the arms polished and arranged in improved order, and the decks re-chalked with new devices. At six in the evening every thing was swept up, and the ball-room astonished even ourselves. It was the prettiest place for a dance in the world.

The ship has an admirable band of twenty Italians, collected from Naples and other ports, and a fanciful orchestra was raised for them on the larboard side of the mainmast. They struck up a march as the first boatful of ladies stepped upon the deck, and in the course of half an hour, the waltzing commenced with at least two hundred couples, while the ottoman and seats under the hammocloths were filled with spectators. The frigate has a lofty poop, and there was room enough upon it for two quadrilles after it had served as a reception room. It was edged with a temporary ballustrade, wreathed with flowers and studded with lights, and the cabin beneath (on a level with the main ball-room) was set out with card tables. From the gangway entrance, the scene was like a brilliant theatrical ballet.

An amusing part of it was the sailors' imitation on the forward decks. They had taken the waste shrubbery and evergreens, of which there was a great quantity, and had formed a sort of grove, extending all round. It was arched with festoons of leaves, with quantities of fruit tied among them; and over the entrance was suspended a rough picture of a frigate with the inscription "Free trade and sailors' rights." The fore-castle was ornamented with cutlasses and one or two nautical transparencies, with pistols and miniature ships interspersed, and the whole lit up handsomely. The men dressed in their white duck trousers and blue jackets, and sat round on the guns playing at draughts, or listening to the music, or gazing at the ladies constantly promenading fore and aft, and to me this was one of the most interesting parts of the spectacle. Five hundred weather-beaten and manly faces are a fine sight anywhere.

The dance went gaily on. The reigning belle was an American, but we had lovely women of all nations among our guests. There are several wealthy Jewish families in Trieste, and their dark-eyed daughters, we may say at this distance, are full of the thoughtful loveliness peculiar to the race. Then we had Illyrians and Germans, and, Terpsichore be our witness—how they danced! My travelling companion the count of Friuli was there; and his little Viennese wife, though she spoke no christian language, danced as feely as a fairy. Of strangers passing through Trieste we had several of distinction. Among them was a fascinating Milanese marchioness, a relative of Manzoni's the novelist, (and as enthusiastic and eloquent a lover of her country as I ever listened to on the subject of oppressed Italy,) and two handsome young men, the counts Neipperg, sons-in-law to Maria Louisa, who amused themselves as if they had seen nothing better in the little duchy of Parma.

We went below at midnight to supper, and the ladies came up with renewed spirit to the dance. It was a brilliant scene indeed. The officers of both ships, in full uniform, the gentlemen from shore, mostly military, in full dress, the gaiety of the bright-red bunting, laced with white and blue, and studded, wherever they would stand, with flowers, and the really uncommon number of beautiful women, with the foreign features and complexions so rich and captivating to our eyes, produced altogether an effect unsurpassed by any thing I have ever seen even at the court fetes of Europe. The daylight gun fired at the close of a gallopade, and the crowded boats pulled ashore with their lovely freight by the broad light of morning.

RAILWAY IRON.

Ninety-five tons of 1 inch by 1/2 inch,				Flat Bars in lengths of 14 to 15 feet counter sunk holes, end cut at an angle of 45 degrees with splicing plates, nails to suit.	
300	do.	1 1/2	do.	do.	
40	do.	1	do.	do.	
800	do.	3	do.	do.	
800	do.	2 1/2	do.	do.	
soon expected.					

250 do. of Edge Rails of 36 lbs. per yard, with the requisite chairs, keys and pins.

The above will be sold free of duty, to State Governments, and Incorporated Governments, and the Drawback taken in part payment.

A. & G. RALSTON.

9 South Front street, Philadelphia.

Models and samples of all the different kinds of Rails, Chairs, Pins, Wedges, Spikes, and Splicing Plates, in use, both in this country and Great Britain, will be exhibited to those disposed to examine them.

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RAILROAD CAR WHEELS AND BOXES, AND OTHER RAILROAD CASTINGS.

Also, AXLES furnished and fitted to wheels complete at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to.

Also, CAR SPRINGS.

Also, Flange Tires turned complete.

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INSTRUMENTS.

SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

EWING & HEARTT, at the sign of the Quadrant, No. 55 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude.

For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewin & Heartt.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable. They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES P. STABLER,

Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' Instruments of your Manufacture, particularly Spirit Levels, and Surveyor's Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These Instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

WILLIAM HOWARD, U. S. Civil Engineer.

Baltimore, May 1st, 1853.

To Messrs Ewin & Heartt.—As you have asked me to give my opinion of the merits of these instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming acquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprise so well merits, I remain, yours, &c.

B. H. LATROBE,

Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them upon application, to any persons desirous of perusing the same.

[FOR THE NEW YORK AMERICAN.]
GREENOUGH.

"With looks flung back and lips apart,
"Like monument of Grecian art."
In that hushed hour of deep suspense—
Where soul is hanging on the tone,
Rapt inspiration's notes dispense,
We see thy hand upon the stone,
Whose cold and formless mass must give
The feelings of a nation's heart;
The pride, the type, and bid it live
A monument of deathless art!
Well may thy modest head be bent,
Though genius bids thee banish fear;
The blush she has, thy features lend,
Is not less graceful than the tear;
For well thou know'st no borrowed aid,
No Grecian chisel can be thine;
Its bright creations all must fade,
Before thy subject, truth divine!
No fancy here may recklessly dwell,
Or bring chimeric forms to view;
Its dreams to bright perfection swell,
And demi gods once more renew.
Still kindling men's whispers thee,
Rude as this marble lay thy land,
Ere waked to light and liberty
By thy great model's sacred hand.
Rest! then his spirit on the stone—
Thy art must call from seeming death
Its power, and beauty blend in one,
Our Hero's, and our Sculptor's wreath!

M.

January 22, 1834.

DIED

Another Revolutionary Hero gone!—Died, at Raleigh, in North Carolina, on the 14th instant, deeply regretted, Colonel WILLIAM FOLK, in the 74th year of his age. The deceased was amidst the band of Patriots who declared Independence in Mecklenburg county, in that State, on the 20th of May, 1775.—At the commencement of the Revolution he was appointed a subaltern officer in the regiment of the South Carolina line, commanded by his father, General Thomas Polk, and at the close of the war he held the rank of Lieutenant Colonel in the North Carolina line, having, except during a nine months' confinement from a severe wound, been in active service during the whole of that memorable struggle. He was present at the battles of Camden, Eutaw, Brandywine, and Germantown, and in the last, was a second time severely wounded. At the battle of Guilford, which occurred during a short interval in which he was out of command, he was actively engaged as a volunteer. The Colonel was the sole surviving Field Officer of the North Carolina line. At the close of the Revolution, he became a member of the Society of Cincinnati; and in 1791 was appointed by General Washington, Supervisor of the Revenue for the District of North Carolina, which he held till the termination of the Excise System; and at the establishment of the State Bank of North Carolina, in 1810, he was appointed President of that Institution, and for ten years, presided over that Institution with great credit to himself, and usefulness to the State.

At the commencement of the late war, he was appointed by President Madison, a Brigadier General in the Army of the United States, which for reasons then well known to the public, he declined to accept.

The Colonel has left behind him, numerous family connections and friends to deplore his loss. He has left behind him a large property, principally in valuable western lands.

SALES OF REAL ESTATE AT AUCTION.

By JAMES BLECKER & SONS.

Lot on the N W corner of Gouverneur and Madison street, 20 by 50 feet \$1,600
Three story brick house and lot 38 Carmine st, 18 by 80 ft. 3,300
Three story brick house and lot No 4 Carroll place, Blecker st 16,000
Three story brick house and lot No 460 Washington, near Wattst, 18 ft 9 by 80 ft 4,000
4 lots corner 1st avenue and 24th st, each 102 ft 410
The two story brick house and lot No 22 Cliff st, between Fulton and John st 8,400
Do do do do, No 24 Cliff st 8,500
The three story brick house and lot No 12 Vesey st, and the three story brick house and lot No 6 Barclay st, adjoining, each 25 by 100 29,850
House and lots Nos 189 and 191 Orange st, 50 ft 10 inches by 100 ft 7,000
Store and lot No 187 Washington st, 25 by 87 ft 13,000
One lot N W corner of Blecker and Charles sts, 25 by 100 3,900
Do on Blecker st, adjoining 2,900
Do on do near Perry st 2,750
Two story frame house and 17 years' lease of lot No 13 Du-malick st, 25 by 100 ft 1,300
Two story house and lot No 74 Broome st, 25 by 87 ft 3,400
The house and lot No 47 Broad st, 21 ft 6 by 140, about 20,000
Under the direction of David Cowwise, Esquire, Master in Chancery—No 9 William st, belonging to the estate of Isaac Minard, 8 W corner of Beaver st, lot irregular 13,900
No 7 William st, adjoining, lot larger 23,000
The house and lot No 60 Beaver st 9,050
Two lots on Greene street, near Spring, each 25 by 100 ft, each 22,600 5,300
Under the direction of S. Cambreleng, Esquire, Master in Chancery—House and lot No 170 Fulton street, lot 25 by 77 ft 10,600

List of Subscribers to the Railroad Journal
who have paid in advance to Jan. 1, 1835,
continued from last week.

Alexander Thompson, jr., New-York City.
Ramsay Crooks, Ditto.
M. C. St. John, Ditto.
J. L. C. Cozier, Lebanon, Madison co., N. Y.
James Jackson, Boston, Mass.
Woodville Hotel, Woodville, Missi.
Judge Ogden, Baton Rouge, La.
Canvass White, Princeton, N. J.
R. H. Bradford, Washington City.

RAILWAY IRON.

Ninety-five tons of 1 inch by 1 inch,	Flat Bars in length of 14 to 16 feet counter sunk holes, ended at an angle of 45 degrees with splicing plates, nails to suit.
300 do. 1 1/2 do. do.	do.
40 do. 1 3/4 do. do.	do.
800 do. 2 do. do.	do.
800 do. 2 1/2 do. do.	do.
soon expected.	

250 do. of Edge Rails of 36 lbs. per yard, with the requisite chairs, keys and pins.
Wrought Iron Rims of 30, 33, and 36 inches diameter for Wheels of Railway Cars, and of 60 inches diameter for Locomotive wheels.

Axles of 2 1/2, 3, 3 1/2, 3 3/4, and 4 inches diameter for Railway Cars and Locomotives of patent iron.

The above will be sold free of duty, to State Governments, and Incorporated Governments, and the Drawback taken in part payment.

A. & G. RALSTON.

9 South Front street, Philadelphia.
Models and samples of all the different kinds of Rails, Chairs, Pins, Wedges, Spikes, and Splicing Plates, in use, both in this country and Great Britain, will be exhibited to those disposed to examine them. d11meowr

NOVELTY WORKS,

Near Dry Dock, New-York.

THOMAS B. STILLMAN, Manufacturer of Steam Engines, Boilers, Railroad and Mill Work, Lathes, Presses, and other Machinery. Also, Dr. Nott's Patent Tubular Boilers, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited. m18

STEPHENSON,

Builder of a superior style of Passenger Cars for Railroads
No. 264 Elizabeth street, near Blecker street,
New-York.

RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part of the New-York and Harlem Railroad, now in operation. J25 tf

SURVEYORS' INSTRUMENTS.

Compasses of various sizes and of superior quality, warranted.
Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by
E. & G. W. BLUNT, 154 Water street, corner of Maidenlane. J31 &

INCOMBUSTIBLE ARCHITECTURE.

INCOMBUSTIBLE dwelling-houses and buildings of all kinds devised or built in New-York, or any part of the United States, as cheap as any other combustible buildings. Actual buildings and houses rendered incomcombustible at a small additional expense.

SHIPS of all sorts, and Steamboats, rendered incomcombustible, and not liable to sink, at a small expense.
For sale, 10,000 lbs. of ANTIGNIS, or Incombustible Varnish, at one dollar per lb.

Apply to C. S. RAFFINESQUE, Professor of Hist. and Nat. Sciences, Chemist, Architect, &c. in Philadelphia, No. 39 North 8th street. A pamphlet given gratis.

References in New-York.—Mr. Minor, Editor of the Mechanical Magazine; Messrs. Rushon & Aspinwall, Druggists. Editors in the city or country, copying this advertisement, will receive a commission on any contract procured by their means. 81 R J M M & F

FOR SALE.

ATLANTIC JOURNAL AND FRIEND OF KNOWLEDGE—A Quarterly Journal, by Professor Rafinesque, of Philadelphia, begun in the spring of 1832, with wood cuts, &c. dedicated to Historical and Natural Sciences, Botany, Agriculture, &c. at one dollar per annum.

MEDICAL FLORA OF THE UNITED STATES, in 2 vols. with 100 plates, containing also the economical properties of 500 genera of American plants. \$3.

MANUAL OF AMERICAN VINES, and Art of Making Wines, with 8 figures. 25 cents.

FISHES AND SHELLS OF THE RIVER OHIO. 1 dollar.

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* * Orders for these works, or any other of Professor Rafinesque's, received at this office. A9 tf J M M & F

PATENT RAILROAD, SHIP AND BOAT SPIKES.

The Troy Iron and Nail Factory keep constantly for sale a very extensive assortment of Wrought Spikes and Nails, from 3 to 10 inches, manufactured by the subscriber's Patent Machinery, which after five years successful operation and now almost universal use in the United States (as well as England, where the subscriber obtained a Patent), are found superior to any ever offered in market.

Railroad Companies may be supplied with Spikes having countersunk heads suitable to the holes in iron rails, to any amount and on short notice. Almost all the Railroads now in progress in the United States are fastened with Spikes made at the above named factory—for which purpose they are found invaluable, as their adhesion is more than double any common spikes made by the hammer.

All orders directed to the Agent, Troy, N. Y., will be punctually attended to.

HENRY BURDEN, Agent.

Troy, N. Y. July, 1831.

Spikes are kept for sale, at factory prices, by I. & J. Townsend, Albany, and the principal Iron Merchants in Albany and Troy; J. I. Brower, 223 Water street, New-York; A. M. Jones, Philadelphia; T. Janniers, Baltimore; Degrand & Smith, Boston.

P. S.—Railroad Companies would do well to forward their orders as early as practical, as the subscriber is desirous of extending the manufacturing so as to keep pace with the daily increasing demand for his Spikes. J25 lam

H. BURDEN.

GRACIE, PRIME & CO. having this day taken into co-partnership JOHN CLARKSON JAY, will continue their business under the same firm.—New-York, 1st October, 1833.

TO STEAMBOAT COMPANIES.

PROFESSOR RAFFINESQUE, of Philadelphia, offers his services to render steamboats incombustible, and not liable to sink, even by the bursting of boilers, or striking against snags, sawyers and rocks. This will save many boats, much property, and the lives of hundreds every year. Those who neglect this easy improvement, deserve to be neglected and deserted by the public as unmindful of safety. Apply, post paid. 81 R J M M & F

TOWNSEND & DUFFEE, of Palmyra, Manufacturers of Railroad Rope, having removed their establishment to Hudson, under the name of Duffee, May & Co. offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J. B. Jervis, Eng. M. & H. K. B. Co., Albany; or James Archibald, Engineer Hudson and Delaware Canal and Railroad Company, Carbon-dale, Luzerne county, Pennsylvania.
Hudson, Columbia county, New-York, {
January 22, 1833. }

ENGINEERING AND SURVEYING INSTRUMENTS.

The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely new: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy—also, a Railroad Goniometer, with two Telescopes—and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes. WM. J. YOUNG,

Mathematical Instrument Maker, No. 9 Dock street, Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.

In reply to thy inquiries respecting the instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad. I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of this kind are liable.

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sights, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to later angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,
JAMES P. STABLER, Superintendent of Construction of Baltimore and Ohio Railroad.

Philadelphia, February, 1833.

Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors.

E. H. GILL, Civil Engineer.

Germantown, February, 1833.

For a year past I have used Instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these Instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY R. CAMPBELL, Eng. Philad.,
German. and Norrist. Railroad.

LOCOMOTIVE ENGINES.

THE AMERICAN STEAM CARRIAGE COMPANY, OF PHILADELPHIA, respectfully inform the public, and especially Railroad and Transportation Companies, that they have become sole proprietors of certain improvements in the construction of Locomotive Engines, and other railway carriages, secured to Col. Stephen H. Long, of the United States Engineers, by letters patent from the United States, and that they are prepared to execute any orders for the construction of Locomotive Engines, Tenders, &c. with which they may be favored, and pledge themselves to a punctual compliance with any engagements they may make in reference to this line of business.

They have already in their possession the requisite apparatus for the construction of three classes of engines, viz. engines weighing four, five, and six tons.

The engines made by them will be warranted to travel at the following rates of speed, viz. a six ton engine at a speed of 15 miles per hour; a five ton engine at a speed of 18 miles per hour; a four ton engine at a speed of 22 1/2 miles per hour. Their performance in other respects will be warranted to equal that of the best English engines of the same class, with respect not only to their efficiency in the conveyance of burdens, but to their durability, and the cheapness and facility of their repairs.

The engines will be adapted to the use of anthracite coal, pine wood, coke, or any other fuel hitherto used in locomotive engines.

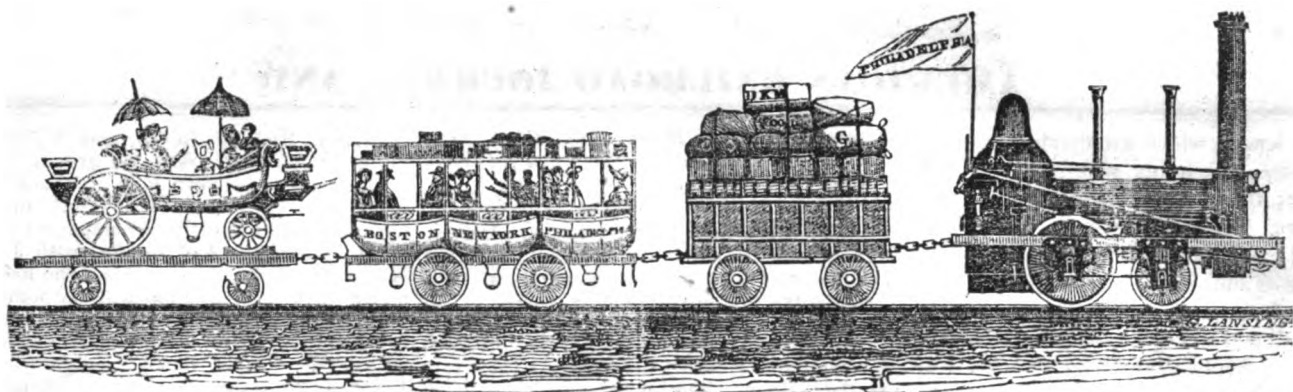
The terms shall be quite as favorable, and even more moderate, than those on which engines of the same class can be procured from abroad.

All orders for engines, &c. and other communications in reference to the subject, will be addressed to the subscriber, in the city of Philadelphia, and shall receive prompt attention.

By order of the Company, WILLIAM NORRIS, Secretary.

December 24, 1833.

For further information on this subject see No. 49, page 72 of this Journal.



AMERICAN RAILROAD JOURNAL, AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT No. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, EDITOR.]

SATURDAY, FEBRUARY 1, 1834.

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, FEBRUARY 1, 1834.

Those of our subscribers to whom bills are enclosed, will do us a great favor by remitting the amount by mail, or by an *early* private hand, as prompt pay only, can sustain the Journal. Subscribers residing in the city will be called upon in the course of the ensuing week.

To those who have so promptly and liberally remitted for the present, or third, and in some cases for the fourth volume, and in almost every instance free of postage, we tender our thanks and best wishes.

We acknowledge our obligation to those who render us so much aid by frequent interesting communications ; yet we wish them and others to recollect, that they are at the same time doing more for the public than for themselves, or for us. A continuance of their favors is earnestly requested. Communications on any of the various subjects treated of in the Journal, are respectfully solicited.

The Saratoga and Schenectady Railroad Company have declared a dividend of *four* per cent., payable on the 10th of February. For a particular account of that road, its cost, condition, &c., see page 51 of this number.

The following evidence of the value of lime as a preservative of timber exposed to the weather, or embedded in the earth, is from an Engineer of great experience. It affords additional evidence, if any were necessary, of the correctness of the theory of our esteemed correspondent G., as published in

our last. As the preservation of timber used for railroads is a matter of so much importance, we would recommend that a thorough test should be made by some of our railroad companies, where their rails come in contact with the earth. It might be used to great advantage, we think, in the construction of railroads on the plan of ELISHA JOHNSON, Esq., as adopted on the Buffalo and Black Rock railroad—a description of which will be given in our next. This plan is, we think, peculiarly adapted to many parts of this country, especially where timber is cheap, and where it is essential to accommodate the inhabitants of the country through which it passes, and who would be best accommodated by using their own teams upon the road—a measure which would render railroads a convenience to individuals, and neighborhoods through which they pass, as well as profitable to the stockholders ; and at the same time remove one of the greatest objections, in the minds of many, to railroads—*monopoly*.

The plan of Mr. Johnson, as explained to us, consists in two longitudinal sills of, or about, twelve inches diameter, with one side made flat, embedded in, and the worked side even with, the surface of the earth, which is made level between, and on the outside of, the sills ; upon which is to be placed a covering of 2½ inch plank, 7½ feet in length ; and upon the plank, and over the centre of the sills, is to be laid a 4 inch scantling to receive the iron, 2½ by ½ inch, which is to be secured by spikes passing through the iron, scantling and plank into the sill beneath, thereby connecting and securing the whole by the same operation.

This plan will undoubtedly find favor, if any mode can be devised, at small expense, to preserve the timber ; and *time*, we have good reason to believe, will be found to answer that purpose. If so, we may have railroads at small cost, and in many places where they are not now even anticipated.

A plank covering, properly laid down, may be made water tight, so as to preserve the earth beneath *always* in a *dry* state, which will, of course, according to McAdam's theory, render it competent to sustain any burthen that ordinary business, either with animal or steam power, may bring upon it.

To the Editor of the American Railroad Journal :

SIR—I am induced to communicate a fact corroborative of the opinion of your correspondent G., in the 3d number of the 3d volume of your Journal, that lime is a preserver of tim-

ber. Some fifteen years ago a friend of mine removed a decayed mill trunk in order to replace it with a new one. The trunk had been laid under ground, and when it was covered with earth, a few scattered lumps of lime were accidentally thrown upon it. On its removal, it was discovered that every part of the wood which was in contact with lime was as perfectly sound as it was when it was first laid, whilst every other part was more or less decayed. Indeed, those parts exhibited a freshness and soundness which were truly remarkable.

XENOPHON.

Capt. Davis Embree, of Cincinnati, Ohio, has furnished us with the following description of an improvement in low water boats, that he is about to put in operation on the Ohio. He says he can lessen the draught of water at least *one-fourth*, while he retains the usual strength, speed, and convenience for freight and passengers. He says he will at the same time introduce the principle of the *life-boat*, and render it almost impossible to sink the boat by snags, rocks or waves.

The boat he is about to build will be 135 feet in length, and 24 feet wide ; the hull will be 3 feet 3 inches deep. The beam of the boat will be shaped like the bowl of a table spoon, so as to rise over the water. Twenty-six feet from the stern there will be a recess on each side, of 6 feet for the wheels to work in. The boat will be reduced there to 12 feet wide. Aft of the wheels there will be a clean run, and transom stern. This narrow part is intended to bear up the wheels and other machinery, and to furnish room for a stern castle, with its capstan, anchors, and other rigging, so essential on that part of the boat, as well as on the bow, when a boat is run in low water. By this arrangement, the wheels of the boat can be thrown out of gear, as well as other side wheels ; they have all the advantage of working in eddy water, or a counter current, of the stern wheel. They have not the propensity to *break down* the stern of the boat, which is always attendant on wheels placed *behind* a boat. That part of the hull, which would otherwise be weak, in consequence of the recesses, will be supported by the cylinder timbers, and the bulk-heads under them.

The hull of the boat will in the first place have three main bulk-heads, running nearly

its whole length, which will divide it into four parts: these bulk-heads will be made of 1½ inch pine; they will be notched over the floor timbers and be fastened to the bottom plank; they will extend to the deck: there will then be ten cross bulk-heads, made of inch pine, placed 9 feet apart, made also water-tight, which will make forty water-proof rooms, 6 feet wide, 9 feet long, and 3 feet 3 inches deep. There will be in each of these rooms two stanchions, placed 3 feet apart, and 3 feet from the bulk-heads, upon the floor timbers, and under the beams. Thus there will be a bearing at every 3 feet in every direction throughout the boat, between the bottom and deck. Then, to secure it more firmly, there will be 160 tie-bolts passed through the bottom, along side of the bulk-heads, and through the deck. This arrangement will give such great strength, that the timbers may be small; they will be made of selected young white ash, as tough as whip stocks. The floor and upright timbers will be but 3½ inches square. The beams (except for the boilers and wheels) will be 2½ inches thick and 4½ wide, bent over the main bulk-heads, and made to extend about 1 foot over the sides of the boat, to form a narrow guard. The bottom plank will be 2 inch oak; the side plank the same; the deck will be 1½ pine; the timbers or scuppers, to drain the bilge water to the pump, will be made by grooves in the bottom plank, so as not to weaken the timbers. The floor or bottom of the boat will be nearly flat, the nuckle nearly square, the sides will flare but 4 inches outwards. There will be small hatches into each room of the hull, to go into it, to stop scuppers or leaks, when required, so that if a snag run through the boat in any direction, so as even to destroy ten of these rooms, there will be still thirty left to buoy up the boat. She cannot sink but by great negligence. This is perhaps the most important feature presented by the plan; but when, in addition to this, we have a boat of full strength and speed, and containing all the usual convenience for freight and passengers, improved from 25 to 30 per cent. in draught of water, we have all that could be reasonably looked for. The boat is supposed to draw but 15 or 16 inches of water with her wood and water aboard, and then it will take nearly six tons to sink her one inch.

The hull will not be suitable or convenient to carry engine, freight, or passengers, within its body. It will be a single buoyant mass, made of light and strong materials; it will be a mere *float*. The first or lower deck will be appropriated for engine and freight, the upper deck for passengers; the cabins will be 16 feet wide, with an outer guard on each side 4 feet wide; the ladies' cabin will be 18 feet long; the main cabin will be 33 feet; the office and pantry 6 feet, and the room for crew and deck passengers 30 feet, with a guard in front. The engine will be of common construction; the boilers will be placed near the middle of the main bearing part of the hull. There will be two boilers, 40 inches diameter, 19 feet long; two flues, each, 15 inches in diameter; the cylinder will be 16 inches diameter, with 4½ feet stroke of piston: it will have a slide valve and puppet cut off. The water wheels will be 13 feet in diameter, with a bucket 6 feet long.

Report of Ephraim Beach, Esq., Civil Engineer, to the President of the Great Au-Sable Railroad Company.

TO JOHN T. NORTON, Esq., President, &c.

Sir,—I beg leave to state, that on a late excursion to Port Kent and Keeseville, at the solicitation of several gentlemen of great respectability, my attention was called to an examination of the importance and practicability of a railroad communication from Port Kent into the interior, along the Valley of the Great Au-Sable River. The importance of the object being consequent upon the resources of the country to be accommodated, I gave to that subject such attention as time and circumstances permitted; the result of which may be briefly stated as follows:

From an official statement of the situation of that district in 1831, it appears that there were then in operation, and in a state of forwardness near completion, in and near the valley of the Great Au-Sable and on its tributary streams, about 70 forges, (each fire being considered a forge,) 2 furnaces, 4 grist mills; together with extensive rolling and slitting mills, chain-cable factories, nail factories, breweries, tanneries, &c., besides numerous smaller mechanical establishments appendant to, and the necessary and natural concomitants of, the larger operations.

The extensive forests, especially within the range of the State road, abound with all the various kinds and qualities of timber characteristic of the country; but that which predominates, and is most valuable for timber, is the Norway and white pine.

I cannot better describe the extensive minerals of this prolific mineral region, than by the following extract of the official report of 1831: "Within three miles of the Au-Sable River, there are two extensive iron ore beds; from one of which the ore is raised by a steam engine. At the other, the ore is separated by Browning's Patent Machine. These ore beds sell from 30 to \$40,000 worth of ore annually."

It is stated that there are also numerous other ore beds near, and accessible to the Great Au-Sable River; as also the Port Kent and Hopkinton State Road, some of which are in partial operation, with strong indications of being inexhaustible in quantity, and not exceeded in quality by the best in the world; which has been abundantly established at various establishments, especially at the Eagle Furnace in Albany. In a word, almost every mountain furnishes indications of iron ore in this peculiar region, some interspersed with other valuable mines in partial development, abounding with correspondent mill sites, affording an ample supply of water power to any extent commensurate with the growing interests of the country. To communicate an idea of the growing industry of the country, I am enabled to state, from the most respectable authority, that, in the district intended to be embraced in the report referred to above, there are *now* in successful operation more than one hundred forges; and that saw mills and other manufacturing establishments have increased in proportion; and it is probable that Agriculture will follow in the train, and keep pace with the openings made by the collier and lumberman. Mercantile establishments are also interspersed through the country, co-extensive with its growing prosperity. From the foregoing premises, the estimate of business for a railroad will be nearly as follows, viz.:

100 forges, averaging 50 tons each per annum—500 tons; 42 saw mills, at 2 tons lumber each per day, 300 days—25,200; wood, and other incidental transportation—10,000; iron ore, for exportation, say—5,000; ascending trade, merchandise, plaster paris, &c. &c. 1.8th of descending—5,850; total—50,350 tons.

From the other manufacturing establishments procuring their raw materials from the products of the country, but little additional revenue can be expected upon the road terminating at Keeseville.

In examining the route, accompanied by

the Hon. Richard Keese and William R. Peters, Esq., I traversed the ground selected for the railroad between Port Kent and Keeseville. I again examined the route more extensively and minutely, accompanied by Col. C. M. Watson. And thirdly, with John N. Macomber, Esq., the engineer, who had made a previous survey, examined all the points with his levelling instruments; and with him and Richard Keese, Esq. measured the depth of the chasm between the rocks through which the River passes, below the village of Birmingham, which, instead of 250 feet to the surface of the water (as has been erroneously stated), we found it at the *table rock*, a short distance above the celebrated high bridge, a great natural curiosity, to be only 105 feet; which satisfactorily demonstrated the correctness of the account given by Mr. Macomber in his survey of the elevations from Port Kent to Keeseville. I am therefore enabled to state, from my own personal observation, that a route can be obtained from Port Kent to Keeseville, on which a railroad may be constructed with great facility and economy, and upon a grade which, after leaving Port Kent, need not in any case exceed an ascent of 25 feet to a mile.

In the plan of construction. I would recommend ascending the hill at Port Kent to the level of the Pine Plane above, (which is about 80 feet above the level of the wharf), by an inclined plane at an angle of elevation not exceeding five degrees from the horizon, which should be graded for; and upon which should be laid a double track railway, with a drum at the head; from which to suspend and take down, and up, the descending and ascending trade; which drum must be connected with a brake to regulate the speed.

From the head of the inclined plane to Keeseville, the route should be carefully surveyed, and properly located; the timber upon the line cut off or grubbed, as the case may require, and cleared 33 feet wide; and all tall trees (which by falling might injure the road,) should be cut down—the ground graded fifteen feet wide for a single track, except near the high bridge and at Birmingham, where the grade should be widened, and a double track laid for the accommodation of those, who, from business, or curiosity to examine the sublime scenery and cataracts in the immediate vicinity, may be induced to stop—as well as turnout places for cars meeting to pass each other. Timber being the staple commodity of the country, and can be procured of an excellent quality, at a reasonable price, should by all means be preferred for the superstructure.

The inclined plane at the commencement of the road at Port Kent, cannot be objectionable; inasmuch as there can be no doubt of there being at all times sufficient descending trade to draw up the ascending—of course, the plane will be self-acting, dispensing with all expensive and hazardous machinery; and if at any future period, the ascending trade should increase to the extent, that the descending shall be insufficient to preponderate, a small but durable stream of water, which passes near the contemplated location of the head of the plane, can with a trifling expense be introduced upon it, and made available in propelling the descending train.

Estimate of Cost of Construction.—For grading the first three miles from Port Kent, at \$2000 per mile, \$6000; 4th mile, passing high bridge and Birmingham, and crossing the river, 4000; 5th mile, from Birmingham to Keeseville, 3000. Total, \$13,000.

Cost of one mile of superstructure, viz. 10,560 lineal feet white pine setts, 6 by 8, at 3 cents a foot, \$316 80; 1760 cedar ties, 8 feet long, 6 in diameter, 6 cents, 105 60; 3520 wedges, one cent, 35 20; 10,560 lineal feet Norway pine, 6 by 6, 3 cents, 316 80; 18 tons iron rail plates, 2 by 1-2 inch, at \$45, 810 00; half ton spikes, \$80; half ton connecting plates, \$60, 140 00; labor putting down superstructure, 960 00. Total, \$2684 40

Cost of 5 miles of superstructure, \$13423 00. For double and lateral tracks, add half a mile superstructure, \$1342 20.

Cost of railroad from Port Kent to Keeseville, \$27,764 20; for engineering, superintendence, &c. &c., 15 per cent., 4164 63; 20 transportation cars, at \$100, is 2000 00; 2 passenger cars, at \$500, 1000 00. Cost of road and vehicles of transportation, ready for operation, \$34,928 83.

From the account of the resources of the annual tonnage to and from the navigable waters for the Au-Sable Valley, is 50,850 tons; but as it is probable that some portion of the business will be transacted through other channels, and to guard against possible errors, we will assume only one half as a safe calculation for the business of the railroad—say 25,425 tons, at the low rate of 6 cents per ton per mile, \$7,627 50; 40 passengers per day (20 each way) 312 days, at 25 cents a passenger, 3,120 00. Total, \$10,745 50.

Suppose the perishable materials of the superstructure to require renewing once in five years, and the cars once in five years, is equal to an annual expense of \$1,597 92; superintendents, horses, drivers, &c., 2,000 08. Total, \$3,597 92—leaving for the nett annual proceeds of the road, \$7,149 58, applicable to the payment of dividends to the stockholders, or upwards of 20 per cent. per annum on their investment.

It will be perceived that the transportation cars (could they be kept in constant employment, would be competent to do four times the business calculated, should they be loaded but in one direction. And one passenger car would do six times the business calculated; yet I think it would be proper to make such provision, to be prepared for any emergency.

Although a railroad from Port Kent to Keeseville would alone be a profitable investment, it would also be an entering wedge to an extension up the valley of the Au-Sable, at least to the Forks (15 miles from Port Kent), which would greatly increase the business on the lower part of the road, and be of incalculable advantage to the manufacturers, in addition to conveying their products to market, by increasing the facilities for the delivery of wood, coal, ore, and other materials, to their establishments; and probably at no distant period form an important link in the contemplated chain of railroad communication between Boston and Ogdensburgh. I am, respectfully, your humble servant,

EPHRAIM BEACH,
Civil Engineer.

Newark, Nov. 23, 1833.

Report of the Committee on the Affairs of the Saratoga and Schenectady Railroad. Presented 4th December, 1833.

The following report of the condition, prospects, &c. of the Saratoga Railroad Company, was furnished us several weeks since, but was accidentally omitted.

To the President, &c.

The Committee appointed by a Resolution of the Board of Directors, held the 28th of September, 1833, to investigate, &c., the affairs of the Company, submit the following Report:

That soon after their appointment, two of your Committee, accompanied by an intelligent gentleman, who has acted in the capacity of Secretary, repaired to the spot, and after several weeks of unremitting attention to the important trust confided to them, have at length been enabled to bring their labors to a close, so far as relates to the present administration of the Road, and also in reference to its future prospects. The Committee, in order to lay before the stockholders a faithful and correct expose of the present condition of the concerns of the Company, together with a prospective view, have carefully and thoroughly examined the various points which the Report embraces, and have the satisfaction to believe that the

results will prove gratifying to all those having an interest in the welfare of this incorporation.

The duties of the Committee, as they conceive, were necessarily divided into two distinct parts. Firstly: The actual condition of the Road, the examination of the accounts for moneys received and disbursed in conducting its active operations from the opening, the appointment of suitable agents, &c., regulating the affairs of the Road in all its various branches, and estimating its present and future resources.

Secondly: In relation to the contracts for completing the different sections of the whole line of Road, their fulfilment, the expenditures for construction, examination of vouchers, and every thing touching the faithful performance of the duties assigned to the agents, engineers, &c. As this part of the investigation would, from the great mass of papers to be examined, consume more time than was at first anticipated by the Committee, they have confined themselves, in their present Report, to the first branch of the inquiry.

The Saratoga and Schenectady Railroad Company was incorporated in February, 1831, with a capital of \$150,000, with the privilege of increasing it to \$300,000. The amount was soon subscribed, and the company organized the same year. The road was commenced about the 1st of September, 1831, and was so far constructed by the 12th of July, 1832, as to be opened for the partial transportation of passengers: the whole line of the rail, however, was not laid till late in the spring of this present year. At the time of applying for the charter, it was contemplated that a cheap structure would have answered the purposes required, but it was subsequently determined, from the prospect of a greater amount of business than was at first anticipated, that a more permanent and substantial one was advisable, both on the score of economy as well as utility. By a report of John B. Jervis, Esq. chief engineer of the Company, presented at a meeting of the Board of Directors, held on the 16th of May, 1832, containing an estimate of the probable cost of the Road, it appeared that the farther sum of \$100,000 would be required over and above the amount of the capital at that time, to complete the Road, including the necessary appendages to put it into active operation. It was accordingly resolved, at a subsequent meeting of the Board, held 18th of May, that the capital stock of the company should be increased that amount, which was all subscribed for, making the entire capital at that time, \$250,000, and subsequently, in the fall of last year and spring of this, the capital was increased to \$285,000. This sum was considered amply sufficient to place the Road in the most perfect condition; but unforeseen circumstances have caused some farther expenditures to complete the Road, and procure the necessary means to conduct its future operations to advantage. The aggregate amount of expenditures for constructing the Road, appears to be \$297,237. The Committee have the pleasure to announce its entire completion, and that it is now in excellent order, and hereafter will only require for ordinary repairs, according to the estimate formed, the annual expenditure of \$3,000.

The Road commences at Schenectady, where it joins the Mohawk and Hudson Road, at its termination on the western inclined plane, passes the canal over a bridge, through the city of Schenectady, then over the Mohawk river, through the towns of Glenville, Clifton Park, Ballston, and the village of Ballston Spa, and terminates in the central part of the village of Saratoga Springs. The route is almost an uninterrupted level, there being no greater inclination than sixteen feet in a mile.

The Committee, in order to be made thoroughly acquainted with the state of the Road, employed a respectable mechanic of this city to inspect all the masonry, walls, culverts,

bridges, &c., and to furnish the Committee with his views in relation thereto. His report is presented. Since then, the unfinished work mentioned therein has been completed.

The Company are now amply supplied with every thing necessary for transporting, the ensuing year, three times the number of passengers that have passed over the Road the present year, and also for transporting, when the contemplated increase of wagons are provided, 20,000 tons of merchandize and produce.

The receipts of the Road, from its commencement to the 30th of November, inclusive, amount to \$16,990 92.

The Committee, in the progress of their duties, were desirous to place the affairs of the Company on such a solid footing as would best secure the interests of stockholders, and have therefore adopted such measures as they believed calculated to produce so important a result. Their attention was particularly called to the imperfect regulations that existed in conducting the active operations of the Road, and also in relation to its financial concerns; they considered an improvement would be effected by having but one general agent or superintendent over the whole line of Road; in the place of two that were then acting with equal powers, and have accordingly appointed Mr. John Costigan, recently of this city, a gentleman disengaged from all other business, and willing to devote his whole time and attention to the concerns of the Company, possessing, in the opinion of your Committee, all the requisite qualifications to fulfil the duties of that office.

In advertent to the financial department, the Committee would observe, that although the funds of the Company were intrusted in the hands of those of unquestionable responsibility, yet it was believed a change might be made that would be more in conformity to what is adopted by other incorporations in relation to this subject, and prove more satisfactory to stockholders.

The Committee have accordingly concluded an arrangement with the Schenectady Bank to receive the gross amount of moneys belonging to the Company, (from whatever source they may be derived,) to be drawn for according to the regulations that may be hereafter adopted by the Board.

The Committee, believing that a system of collections, differing from that which has been hitherto pursued, might be formed, that would prove more beneficial, have adopted it accordingly.

In deliberating on the foregoing subjects, your Committee were led to consider the advantages that would result by establishing a set of by-laws, to govern the proceedings of the Company, which they herewith submit for the consideration of the Board.

The attention of the Committee was next turned to the subject of the future prospects of the Company, which occupied a considerable portion of their time; and they are gratified to find it presents a very encouraging aspect. In addition to the summer and local travel, there is, in the opinion of your Committee, a wide field opening in the direction of the North and West, for extensive business in the transportation of passengers and freight. There have been various estimates formed as to the amount of northern business travel; but it has been ascertained, from authentic sources, that at least 30,000 persons pass each way, in the course of the year, during the opening of navigation on Lake Champlain, who have heretofore taken what is termed the "River Route;" and, from the measures already pursued by the Committee in order to secure this travel, it is confidently believed that a large proportion of this number will in future select the route of the Railroad. The ordinary time to perform the journey, by the stage route, from Whitehall to Albany, is from 12 to 14 hours. By the Railroad, it could be easily accomplished in 10 hours, including the necessary stoppages; fur-

nishing a much more easy and expeditious mode of conveyance.

The Committee have given publicity to the permanent arrangements of the Road for the transportation of passengers, &c., by advertising in the newspapers in the northern and western parts of this state, and in Vermont and Canada; which means of making known to the public the facilities offered by the Railroad appear to have been heretofore, in a great measure, overlooked. The Utica and Schenectady Railroad, now about being constructed, it is believed, will materially add to this branch of business. The Committee have received a written communication from the Commissioner of that road, expressive of his views on the subject.

An arrangement has been completed with the Mohawk and Hudson Railroad Company for a continuous line of transportation, for passengers and freight, between Albany and the Springs; thereby avoiding the inconvenience and loss of time heretofore experienced in changing the carriages and baggage cars at Schenectady. The utility of this arrangement will be duly appreciated by those who have passed this route previous to this regulation: it has given very general satisfaction, and the beneficial results have been already witnessed by your Committee.

The transportation of merchandize and produce has also claimed particular notice and attention. It appears to be divided into two branches, viz.: the exports, consisting principally of the products of the forest, sawed timber, and other articles enumerated, which gives the amount of 19,150 tons; the imports, consisting of foreign merchandize for the consumption of the surrounding country, and of products from the west, the most important item of which is plaster, amounting itself heretofore to at least 3000 tons per annum. This will be augmented in a very great degree; as previous to the construction of the Railroad, this article, from its heavy cost of transportation, was introduced but to a limited extent. From the facilities now afforded, many proprietors are induced to cut the wood and clear the land for the purposes of culture; and the time is not far distant when this portion of the country, hitherto almost secluded from participating in the benefits of commerce and agriculture, will rise into notice.

Already the transportation of goods from the Hudson river has commenced under the most favorable auspices, being conveyed in much less time, and at a cheaper rate, than via canal. Within the last month, freight destined for Saratoga, which was formerly conveyed in the canal to Schenectady, and then placed in freight wagons, is now taken from the foot of the eastern inclined plane of the Mohawk and Hudson road, at the wharf, and conveyed to Ballston and Saratoga in the same wagons; and is also returned in the same manner. It is to be observed, that a considerable portion of the line of this Railroad is distant 12 miles from any canal, which gives it a decided advantage in the transportation of freight, particularly in the article of wood for fuel, which hitherto could only find a home market to a limited extent, the cost of the ordinary mode of conveyance precluding it being sent to a more distant one.

The Committee do not consider it as any exaggeration to say, that the receipts from transportation of freight alone, which has heretofore received but little attention from the Company, may be made to pay all the expenses of the general operations of the Road; leaving the receipts from passengers as net profits.

The Committee were gratified to see, on the 21st ultimo, the article of anthracite coal conveyed from the Hudson river, at the foot of the inclined plane, over the two Railroads to the vicinity of Ballston Spa, to be used for manufacturing purposes, for which large quantities will be required.

(To be concluded in our next.)

THE GENESEE AND ALLEGANY CANAL.

(Continued from page 4.)

Report from the Canal Commissioners, pursuant to the act entitled "An act to provide for the Survey of certain Canal Routes therein mentioned." Made to the Assembly March 6, 1826.

To the Legislature of the State of New-York:

The Canal Commissioners, in obedience to the provision of an act entitled "an act to provide for the survey of certain canal routes therein mentioned," have caused surveys and examinations to be made of the most eligible routes for navigable communications, in the following places, to wit:

From the Seneca lake to the Chemung river.
From Syracuse to Port Watson.

From Chenango point, by the town of Norwich, to the Erie canal.

From the valley of the Unadilla to the Erie canal.

From the Cayuga lake to the Susquehannah, near Owego.

From the Erie Canal in the county of Herkimer, to the St. Lawrence.

From the Erie canal at Rome, by Boonville, to Ogdensburg.

From the Erie canal at Rome, by Camden, to Ogdensburg.

*From Rochester to the Allegany river, by various routes.

*From the Erie canal to the Allegany, by Batavia.

*From the Erie canal to the Allegany, by the valley of the Conawanga.

*From Portland on lake Erie, to the head of Chataque lake.

2 From the Champlain canal to the Vermont line, by various routes.

From Gravesend Bay, through the bays on the south shore, to the east end of Long Island.

From Schoharie creek to the valley of the Catskill.

Messrs. Geddes, Roberts, Thomas, Hutchinson, Young, Whippo, and Sargent, were the engineers employed to survey the above mentioned routes; their reports, maps and estimates, are herewith transmitted, and will furnish the legislature with the necessary information on the subjects to which they respectively relate.

The foregoing surveys, and the one submitted a few days since, of the route from "Sharon or near thereto, to the tide waters of the Hudson," are all the routes comprised in the above mentioned act, excepting a short route from Rochester to lake Ontario.

SAMUEL YOUNG,
HENRY SEYMOUR,
WILLIAM C. BOUCK,

6th March, 1826.

GENESEE CANAL.—A Canal from Rochester to Genesee will pass over a country so favorable to the making one, that notwithstanding the valuable river navigation now used between these places, an artificial canal will undoubtedly be accomplished. The route of a canal may follow a track almost as direct as a road along the river.

From the upper end of the feeder to Genesee, will be about 27 miles, the making of which will cost less perhaps than any 27 miles of canal ever did, exclusive of lockage. The rise from the Erie canal to Squawkey hill is 68 feet, to Genesee feet.

At Squawkey hill, a smooth surface gives place to the narrow defile, the deep chasm, and the frowning precipice.

From below Smith's mills in the town of Nunda above the great falls, [the river enters at country of tremendous gulfs, passing down cataraacts, and through rapids, falling 453 feet to Gardeau flats, thence running rapidly to Squawkey hill with a fall of 76 feet more.

To make a canal which will have in it this 529 feet of lockage, it must pass the first falls below Smith's mills in the river bed, defended by masonry until it gains the table land immediately below, where the face of the country

will admit of its leaving the brow of the gulf below, and by some deep cuttings through points of hills, pass on to a very smooth faced country of clay soil, over which a canal can be conducted down the hill to the river near Mount Morris.

Sixty-six locks, of 8 feet lift each, will have to be placed in a space not exceeding nine miles, allowing something more than a furlong to each lock.

Following up the river from Smith's mills to the mouth of Black creek 22 miles, the valley is free from high precipitous rocky shores, but some obstructions by slip banks of clay occur in several places. To secure against those slips is sometimes difficult, and great disasters are often occasioned by them. Excepting these threatening slips, the valley is favorable to the making a canal in it. The lockage in this 22 miles is 162 feet, not quite an eight feet lock to a mile.

Following up the valley of Black creek, another rapid rise takes place. In three miles there will be 17 eight feet locks: some rocks on the falls on Black creek, but they are of a loose texture, and their removal will not be expensive. They are a yellow sand stone, in which shells of numerous varieties are embedded.

From these falls seven miles to the summit, the surface is smooth, but the earth is filled with loose stones, producing most unpleasant roads along the valley.

The whole rise from the Erie canal to the summit is 981 feet. On this summit, between Genesee and Allegany waters, there lies a swamp, about two miles in length. This swamp, which is in some places open, and in some places timbered, drains into Black creek, and into Oil creek. It will be profitable to cut down this summit eight feet in the deepest place, and the lockage is so calculated.

This summit pound must be extended down the north side of Oil creek valley to its junction with Ishua creek, where, from a feeder of two miles in length, the whole of the Ishua creek can be received into the summit level.

The length of the summit will be eight miles; it will pass down the Oil creek valley with facility, not running much on the face of the steep hill, although the junction of the streams is 41 feet below said summit level.

The whole fall to Allegany at the mouth of Olean creek, is 78 feet—whole lockage ascending and descending, 1,059 feet.

The length of canal to be made from the upper end of the feeder near Rochester to Olean, will vary little from 100 miles. The lockage is equal to 132 eight feet locks on this canal of 103 miles, measuring from the Erie canal to Allegany river. The Union canal, now making in Pennsylvania, between the Susquehannah and Schuylkill, is 75 miles long, with 90 locks. As 75 is to 90, so is 103 to 123, exceeding the proportion to the Union canal by 9 locks.

A passage from the Ohio valley to the Genesee valley is here 1488 feet above tide level, and is less elevated than any passage that has been examined, either to the Potomac or to the Susquehannah valleys. The canal proposed from the Conamau to Juniata, through a tunnel four miles long, is (taking "the level that has been assumed") 1831 feet above the tide,"* an elevation of 343 feet more than the pass to Genesee valley, which will be without tunnel or deep cutting.

But from examinations made by Mr. Whippo, there is a passage found up the Conawanga valley, the summit 724 feet above the level of lake Erie. Add 570 feet, the elevation of lake Erie above the ocean, and said summit stands but 1294 feet above tide level—194 feet lower than that of Oil creek and Genesee. Mr. W. gives the fall to Warren, in Pennsylvania, in 24 miles, 132 feet. Pittsburgh being 756 feet above tide level, it results, that there is but 406 feet rise from Pittsburgh to Warren. The length of a canal from Buffalo to Warren he

* See report, &c. of the commissioners, &c. printed at Harrisburgh, 1825, page 40.

makes 89 miles. In this 89 miles the lockage will be 724 feet up, and 132 down, equal 856 feet, making 107 eight feet locks in 89 miles. The lockage on the canal here proposed, when compared with its length, bears a remarkable comparison with the Union canal—75 miles is to 90 locks, so is 89 miles to 107 locks. This summit pound can be fed from the Chataque lake, which was styled by Mr. Gallatin "an extensive and important elevated reservoir."

The Oil creek and Black creek summit has some peculiar features. At the mills of Cady and Baldwin, on Oil creek, which is the highest point from which arks and rafts have been sent, the high floods flow over the intermediate ground, (a marsh,) and pass to the gulf of St. Lawrence instead of the gulf of Mexico. Permanent streams of each pass in the marsh within twenty chains of each other.

The Oil creek descends with a moderate current to the Ishua, in which distance are three saw mills that would lose all their water by a canal.

Lime, which abounds at Batavia and a small distance south, has been found lately south of Perry village, but a little west of the Genesee river, on a very high level. The earthy lime is found in many places near the proposed canal line, particularly at Lime lake, which is proposed to be brought into the Ishua, to feed the upper level of this canal.

A summit pound here would be abundantly supplied with water. The drainage of 190 miles of surface can be turned into it. See map No. 10, where this tract is marked out by a red dotted line. Mr. Roberts gives the following account of the capacity of the streams in October last.

Ishua creek at Farewell's mills—cubic feet per minute. 750

Lime lake, Beaver lake, and Peacock lake, which can be brought through feeders into the Ishua, (see map No. 5.) 400

Oil creek,† 450

Together per minute, 1600

The four feeders shown on map No. 5 are, together, 11 miles long, which may be valued as so much canal.

Estimates then will be on

111 miles canal, at \$5000 per mile, \$555,000

1059 feet of lockage, at \$150 per foot rise, 158,850

Extras for passing Genesee falls, 30,000

Deep cutting on the summit two miles long, deepest eight feet, 12,320

Deep cutting on Lime lake feeder, one mile ten feet, 10,560

To secure against slips on Genesee river, 30,000

Aqueduct over Canastota, 10,000

Dams at Conesus and Honeyoe outlets, 2,000

Dam on Genesee river at the mouth of Black creek, 2,000

Amounting to \$810,730

For superintendence and engineers, add 8 per cent, 64,858

Total amount, \$875,588

* Gallatin's report, &c.

† Mr. Roberts made Oil creek at its mouth 551 feet; about 100 feet perhaps cannot come into the summit pound.

[To be continued.]

GREAT RAILROAD MEETING.—At a meeting of citizens of the counties of Ontario, Livingston and Genesee, held at Haxton's Hotel, in the village of Caledonia, on Wednesday the 15th day of January, 1834, for the purpose of taking into consideration the propriety of making application to the legislature of this state, now in session, for an act of incorporation to authorize the construction of a Railroad from Buffalo, through Batavia, Le Roy, Caledonia, Avon and Canandaigua to Geneva, the Hon. MOSES ATWATER, of Canandaigua, was called

to the chair, and GEO. W. CLINTON, of Canandaigua, and LANSING B. MIZNER, of Geneva, were appointed Secretaries.

The object of the meeting having been briefly stated by H. J. Redfield, Esq. it was, on motion.

Resolved, That a Committee of five be appointed to prepare resolutions for the consideration of the meeting. Whereupon David Hudson, of Geneva, Heman J. Redfield and Jacob Le Roy, of Le Roy, George Hosmer, of Avon, and William Blossom, of Canandaigua, were appointed said Committee.

The Committee having retired for a short time, returned, and after a few brief and pertinent remarks from their chairman, presented the following preamble and resolutions, which were fully considered and unanimously adopted.

Whereas, in the construction of the Erie canal, insurmountable obstacles were presented to locating that invaluable improvement along the great thoroughfare between Geneva and Buffalo, whereby a very large and most valuable portion of western New-York has been, in a great measure, deprived of the immediate advantages resulting from the completion of that work;

And whereas those natural obstacles which are presented to the formation of canals, are not met with in the construction of Railroads, and it being manifest from the examinations and surveys already made, that a Railroad may be laid down from Buffalo, on a line passing through Batavia, Le Roy, Caledonia, Avon and Canandaigua, to Geneva, at an expense within the means of those who are interested in the proposed measure;

And whereas the construction of the said road, on the line aforesaid, will very greatly advance the agricultural and manufacturing interests of this part of the state; therefore,

Resolved, That it is expedient to take measures immediately for applying to the legislature, now in session, for an act incorporating a company to construct a Railroad from Buffalo, through Batavia, Le Roy, Caledonia, Avon and Canandaigua, to Geneva, as nearly on the great western thoroughfare as may be practicable.

Resolved, That a Committee of three be appointed to take the necessary steps for carrying into effect the foregoing resolutions.

Whereupon, Heman J. Redfield, of Le Roy, Jared Wilson, of Canandaigua, and George Hosmer, of Avon, were appointed said Committee.

Upon motion, it was also

Resolved, That Henry Morris, of Buffalo, Ethan B. Allen, of Batavia, Heman J. Redfield, of Le Roy, Robert McKay, of Caledonia, Curtis Hawley, of Avon, M. W. Brown, of Lima, G. W. Clinton, of Canandaigua, and L. B. Mizner, of Geneva, be appointed a Committee of Correspondence.

Resolved, That the proceedings of this meeting be published in the newspapers at Buffalo, Batavia, Le Roy, Canandaigua and Geneva, and in the Albany Argus.

MOSES ATWATER, Chairman.
GEO. W. CLINTON, } Secretaries.
L. B. MIZNER, }

RAILROAD FROM LONDON TO PARIS.—In the *Journal des Debats*, of Wednesday, we find a very able article, written by a native of France, resident in London, upon the important advantages likely to result from the formation of a railroad between London and Paris. In the estimate of the effects likely to arise from facilitating the communication between the two countries, the writer chiefly takes into consideration those that will be produced in France; and among the benefits which his country will derive from the speedy and cheap conveyance afforded by railroads, he places particular stress upon the commercial education which it will be the means of bestowing upon his countrymen. "If," he observes, "there were a railroad from

London to Paris, we Frenchmen, who scarcely know what business is, would go to learn it in London, where the spirit of business seems to be born with the people. Our speculators would there see how great undertakings are conducted simply and without diplomacy. Our retail venders and purchasers would learn from the English, that to buy and sell well it is not necessary to charge exorbitantly and to haggle for lower prices. Our capitalists and merchants would find that there is no durable commercial prosperity and no security for capital where credit is not well founded; they would see the operations of the Bank of England and its branches, and perhaps they might be disposed to introduce into their own country similar institutions, which are so advantageous both to the public and to the proprietors. We should see there in what comfort consists, so essential to the tranquillity of life, and how it may be attained. As we are a people abounding in self-love, we should return from England ashamed of the condition of our agriculture, of our modes of communication, of our schools of elementary instruction, and we should endeavor to equal our neighbors in these respects. The railway from London to Paris would thus become an institution for public education. It would constitute a commercial establishment of the first order, and it would also become a political institution, and form the elements of a close and indissoluble alliance between France and England."—[London Courier.]

RAILWAYS.—We are glad to find that the directors of the Liverpool and Birmingham railway are proceeding in the formation of their works with a degree of promptitude and activity which augurs well for their speedy completion. In the adjoining county of Chester, the cutting of the line has commenced at several points; and in that part of the line which lies between Knutsford and Mere, considerable progress has already been made; and we perceive that the directors are advertising for tenders for the erection of a viaduct over the river Weaver, in the township of Dutton, which, when completed, will be, perhaps, the most magnificent structure of the kind in the United Kingdom. It is to consist of 18 arches, each of 60 feet span, and 60 feet high; so that the Sankey viaduct will appear insignificant in comparison with it.—[Manchester Guardian.]

Application is to be made in the ensuing session of Parliament, for powers to extend the line of the Grand Junction Railway, and by means of a tunnel to connect it with the London and Birmingham Railway, at the termination of the line of the latter railroad in Nova Scotia Gardens.

A NOVEL SPECIES OF STREET PAVEMENT.—A gentleman lately from St. Petersburg describes a new and ingenious mode of paving streets, successfully tried in that capital. Instead of wrought stones or Macadam's gravel (both of which are in use there) the Russians have employed blocks of wood, we presume hard wood, set on end. They are about a foot long, by eight or nine inches broad, and are cut into hexagons, which are closely joined and fitted to each other. When seen from a window in the second or third story, they present a regular and beautifully tessellated surface, like the inlaid oak floors seen in old houses. The droskies, which, from their heaviness and the smallness of their wheels, make an intolerable noise on the wrought stone pavement, pass over the blocks of wood as quietly as if they rolled on a carpet.—[Liverpool Albion.]

A correspondent of the United States Gazette says that an arrangement has been made by our enterprising fellow-citizen, Colonel Reeside, with the Camden and Amboy Rail Road Company, for the conveyance of three mails, daily, between this city and New York. This arrangement, for which Colonel Reeside is entitled to the thanks of the public, is to go into operation in a few days.

MILL-WORK.—Under this head we purpose noticing the simplest combinations of wheel-work which are employed in the construction of mills, and, under the articles **WIND and WATER MILLS**, complete views, both graphic and descriptive, will be given of their construction.

The business of a millwright is usually combined with the practical part of engineering, and much of the wind and water power formerly employed in giving motion to machinery is now superseded by the introduction of the steam engine. Indeed, without the agency of steam power, this country could in no shape compete with other manufacturing nations; so that, on account of the great importance of the steam engine as a prime mover, it will be advisable to devote a commensurate space to its illustration.

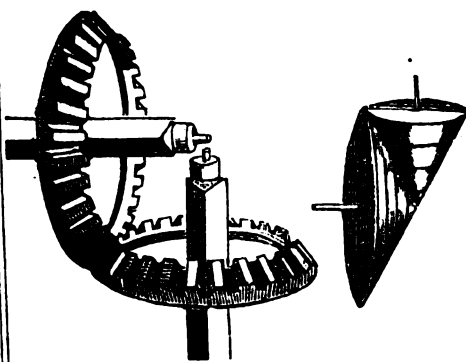
Various are the methods by which motion may be communicated from one part of a machine to another; and much of the skill of the millwright consists in his adapting certain methods to his particular purposes. Sometimes a simple cord, or a cord with pulleys, may be used. Levers, either simple or combined, are employed to communicate and also change the direction of the motion. Rods also are employed, which may be carried to a great distance by being connected together. But of all the modes of communicating motion, that by means of wheels is the most frequent. Wheels may be made to turn each other even by the simple contact of their surfaces when pressed together; or their circumferences may be formed into brushes with short thick hair, which enable them to turn each other with considerable force; or they may have cords, or straps of leather, or chains, passing from one to another; and at other times there are points or protuberances on the rims of the wheels. The most usual method, however, of making wheels drive each other, is by means of teeth. These are either cut into the substance of which the wheel is composed, when it is of metal; or formed at the same time as the rest of the wheel, when it is cast.

The proper method of shaping the teeth of wheels, so as to communicate the motion equally, and with as little friction as possible, is a matter of very great nicety, and has given rise to much study among mechanics. The ends of the teeth should be curves, but not parts of complete circles. They may be formed of the curve called the epicycloid, or of the involutes of circles, which are curves described by a point of a thread, which has been wound round the wheel while it is uncoiled.

A wheel which has teeth cut upon the circumferences, so as to project out in the plane of its face, is called a spur wheel; and, when the projection of the teeth is at right angles to the face of the wheel, and parallel to the axis, the wheel is called a crown or contrate wheel. Sometimes the faces of the two wheels are in the same plane, and consequently the axes parallel; and at other times the axes are at right angles to each other, one being a spur and the other a contrate wheel.

There is a mode of placing the teeth frequently resorted to, which consists in leveling the edge of the wheel, and cutting the teeth on the bevel, by which they may turn in each other, though variously inclined, and the teeth have also great strength. The principle consists in the cones rolling on

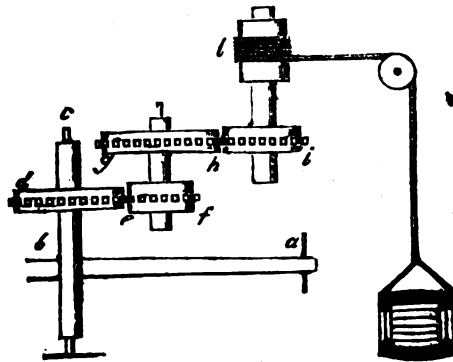
the surface of each other, as in the annexed right-hand engraving; if their bases are equal, they will perform their revolutions in one and the same time.



If the cones are fluted, or have teeth cut in them diverging from the centre, they are then called *bevel gear*. The teeth may be made of any dimension, according to the strength required; and it is of great use to communicate a motion in any direction, or to any part of a building. The bevel gear represented in the left-hand figure must be supported by a frame at the point where the pivots intersect each other. The frame is usually formed of iron or wood, and when the latter is employed the pivot-hole is of brass. The perpendicular shaft should always be made to revolve on a sharp point in the centre.

Hook's universal joint, (described at page 154, vol. ii,) may be applied to communicate motion instead of bevel gear, where the speed is to be continued the same, and where the angle does not exceed thirty or forty degrees and the equality of motion is not regarded; for, as it recedes from a right line, its motion becomes very irregular. This joint may be constructed by a cross, or with four pins fastened at right angles upon the circumference of a hoop, or solid ball. It is of great use in cotton mills, where the tumbling shafts are continued to a distance from the moving power.

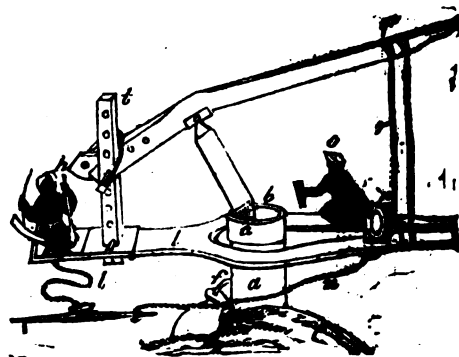
The employment of animal power in the simplest species of mill-work may be well illustrated by the accompanying sketch, in which a horse may be attached to a long lever, and thus made to raise a weight by a train of wheels and pinions.



The weight to be raised is suspended by a rope or chain which winds round the drum, *l*. On the same axis is placed a wheel, *i*, actuated by another wheel, *g h*. The wheel, *d e*, gives motion to the whole, by the intervention of the small wheel at *f*. A horse at *a* may be considered as the prime mover, as the lever *a b* is on the axis *c*. Now, in this apparatus, there is a loss of power, but a gain in velocity.

The various modes of constructing mills

for domestic, as well as manufacturing processes, will be explained hereafter, and we now purpose confining ourselves to a single example of the mode of employing animal power, in a way which, from its simplicity, might be adopted to a great extent in this country. There is a mill of a cheap and effective kind used in many parts of the East, which appears to have suggested the use of the ordinary snuff-mill. Indeed, it is, in some respects, superior to it. This mill, which is employed in the preparation of sugar, consists of a mortar, beam, lever, pestle, and regulator, as represented in the engraving beneath:



The mortar, *a a*, is a tree about ten feet long and fourteen inches over, which is sunk in the earth, so as to leave about two feet above ground. At the top is formed a conical cavity like a funnel, which ends in a hollow cylinder, with a hemispherical projection at the bottom, in order to allow the juice to run freely to the small opening that conveys it to a spout, *f*, from which it runs into an earthen pot. Round the upper mouth of the mortar is a circular cavity, *b*, which serves to collect any of the juice that may run over from the upper end of the pieces of cane. A channel is cut to convey this juice down the outside of the mortar to the spout, *f*.

The beam, *i*, is about 16 feet long and 6 inches thick, and is cut from any large tree that is divided by a fork into two arms. A hollow circle is made in the fork for the mortar, round which the beam turns horizontally: the surface of this excavation is secured by a semi-circle of some strong wood; the other end of the fork is left quite open, in order that the beam may be changed without any trouble. The bullock driver sits on the undivided end, to which the cattle are yoked by a rope, *l*, from his end of the beam, and they are kept in the circular tread by another rope, *m*, which passes from the yoke to the forked end of the beam. A basket, *n*, is placed upon the forks to hold the cuttings of the cane, and the man, *o*, who feeds the mill, sits between this basket and the mortar. He takes care to place the pieces of cane sloping down the cavity of the mortar, just at the time that the pestle comes round; and after the pestle has passed, he removes those which have been squeezed.

The lever, *p*, is a piece of timber nearly as long as the beam. The thickest end, which is also the lowest, is connected with the undivided end of the beam by means of a regulator, *t*. A little way from the place where it is joined to the regulator, a piece of very hard wood is morticed into the lower side of the lever, and a smooth conical hollow is made in this piece, to receive the head of the pestle. The end of the lever

furthest from the regulator is fastened by two ropes to the two arms of the beam.

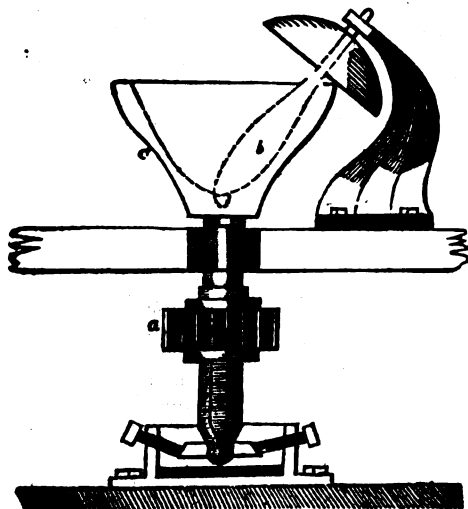
The pestle is a strong cylindrical piece of timber, cut to a point at each end. The upper end is a smooth cone, the lower end a pyramid of 12 to 15 sides, at the point of which is a strong cylinder. As the pestle is placed obliquely, it rubs strongly against the sides of the mortar as it passes round; and its cylindrical point rubs also on the top of the hemispherical projection, *d*, which is in the bottom of the cavity of the mortar.

The regulator, *t*, is a strong square of timber, which passes through the undivided end of the beam, and is secured below it by part of its circumference being left for cheeks. It is pierced by eight holes, and a pin is placed in the lowest hole, to prevent the regulator from falling when the strain is removed.

The canes with which the mill is supplied are cut into pieces six inches long. The mill goes night and day during crop time, and presses about fifty-six pots, or 219 gallons of juice, in that time. Two bullocks are used at a time, and as they are driven very fast, they are changed every time three pots of juice are expressed, and work no more that day.

In the manufacture of snuff in this country, the grinding is performed by a loaded pestle, made to turn round as it rubs against the sides of a cast iron mortar, the pointed lower end of the pestle being retained in its place by a hole at the bottom of the mortar. In large manufactories, a number of these mortars are placed in a circle, having a large toothed wheel in the centre, surrounded by as many upright spindles, with pinions to work in the wheel.

Mr. Gill has proposed an improvement on this plan, which is represented beneath :



The mortar, *c*, is in this arrangement made to revolve, and the pestle, *b*, is supported by a bracket firmly attached to the beam beneath. The pinion, *a*, rests on a conical axis, and communicates, as in the old arrangement, with the principal driving wheel.

Water-mills are of three kinds: *Breast-mills*, *undershot-mills*, and *overshot-mills*, according to the manner in which the water is applied to the great wheel. In the first, the water falls down upon the wheel at right angles to the *float-boards*, or bucket, placed to receive it. In the second, which is used where there is no fall of water, the stream strikes the float-boards at the lower part of

the wheel. In the third, the water is poured over the top, and is received in buckets arranged round the wheel.

A less quantity of water will turn an overshot mill (in which the wheel has buckets instead of float-boards) than a breast-mill, where the fall of water seldom exceeds half the height of the wheel; so that, when there is but a small quantity of water, and a fall great enough for the wheel to lie under it, the bucket, or overshot-wheel, is always used; but, where there is a large body of water, with a small fall, the breast or float-board must be used. Where the water runs only upon a small declivity, it can act but slowly upon the under part of the wheel, in which case the motion of the wheel will be slow; and therefore the floats ought to be very long, that a large surface of water may act upon them, so that what is wanting in velocity may be made up in power; and then the cog-wheel may have a greater number of cogs in proportion to the rounds in the trundle, in order to give the mill-stone a sufficient degree of velocity.

It was the opinion of Smeaton, that the powers necessary to produce the same effect on an undershot-wheel, a breast-wheel, and an overshot-wheel, must be to each other as the numbers 2.4, 1.75, and 1.

Wind, which we may consider as the next substitute for animal power, appears to have been first employed to give motion to machinery in the beginning of the 6th century. The use of this species of mechanical force is, however, principally limited to the grinding of corn, the pressing of seed, and other simple manipulations, the great irregularity of this element precluding its application to those processes which require a continued motion.

A windmill with four sails, measuring seventy feet from the extremity of one sail to that of the opposite one, each being six feet and a half in width, is capable of raising 926 lbs. 232 feet in a minute, and of working on an average eight hours per day. This is equivalent to the work of 34 men, 25 square feet of canvass performing the average work of a day laborer. A mill of this magnitude seldom requires the attention of more than two men; and it will thus be seen that, making allowance for its irregularity, wind possesses a decided superiority over every species of animal labor.

The following very important errors have frequently been made by mathematicians and practical mechanics, in the estimation of the force of the wind or the water on oblique surfaces; they have generally arisen from inattention to the distinction between pressure and mechanical power. It may be remonstrated that the greatest possible pressure of the wind or water, on a given oblique surface at rest, tending to turn it in a direction perpendicular to that of the wind, is obtained when the surface forms an angle of about 55° with the wind; but that the mechanical power of such a pressure, which is to be estimated from a combination of its intensity with the velocity of the surface, may be increased without limit by increasing the angle of inclination, and consequently the velocity. The utmost effect that could be thus obtained would be equal to that of the same wind or stream acting on the float-boards of an undershot-wheel; but, since in all practical cases the velocity is limited, the effect will be somewhat smaller than this: for example, if the mere velocity of

the sails or float-boards be supposed equal to that of the wind, the mechanical power will be more than four-fifths as great as that of an undershot wheel; that is, in the case of a windmill, more than four-fifths of the utmost effect that can be obtained from the wind. In such a case Maclaurin has shown that the sails ought to make an angle of 74° with the direction of the wind: but in practice it is found most advantageous to make the angle somewhat greater than this, the velocity of the extremities of the sails being usually, according to Mr. Smeaton, more than twice as great as that of the wind. It appears, therefore, that the oblique sails of the common windmill are in their nature almost as well calculated to make the best use of any hydraulic force as an undershot-wheel; and, since they act without intermission throughout their whole revolution, they have a decided advantage over such machines as require the sails or fans to be exposed to a more limited stream of the wind during one half only of their motion, which is necessary in the horizontal windmill, where a screen is employed for covering them while they are moving in a direction contrary to that of the wind: and such machines, according to Smeaton, are found to perform little more than one-tenth of the work of those which are more usually employed. The sails of a common windmill are frequently made to change their situation, according to the direction of the wind, by means of a small wheel with sails of the same kind, which turns round whenever the wind strikes on either side of it, and drives a pinion turning the whole machinery; the sails are sometimes made to furl or unfurl themselves, according to the velocity of the wind, by means of a revolving pendulum, which rises to a greater or less height, in order to prevent the injury which the flour would suffer from too great a rapidity in the motion, or any other accidents which might happen in a mill of a different nature. The inclination of the axis of a windmill to the horizon is principally intended to allow room for the action of the wind at the lower part, where it would be weakened if the sails came too nearly in contact with the building, as they must do if they were perfectly upright. When it is necessary to stop the motion of a windmill, a break is applied to the surface of a large wheel, so that its friction operates with a considerable mechanical advantage.—[Partington's Scientific Gazette.];

SINGULARITY OF RECORDS.—There is, perhaps, no one principle in human nature that leads to greater consequences, than the concentration of application to singular research.

But this, like every other principle, has occasionally strange and useless terminations, that may be called *lusus naturæ* in mortals. As an instance of this, I will present you with the result of a man's labor for three years, eight or nine hours in a day, Sundays not excepted, to determine the verses, words, and letters, contained in the Bible.

Verses	-	-	-	-	31,173
Words	-	-	-	-	773,692
Letters	-	-	-	-	3,566,480

The middle and the least chapter is the 117th Psalm.

The middle verse is the 8th verse of the 171st Psalm.

Jehovah is named 6,855 times. The middle of these Jehovahs is in second Chronicles, fourth chapter and 16th verse.

The word *and* is found in the Bible 46,227 times.

The least verse in the Old Testament, is in first Chronicles, 1st and 10th verses. The least in the New Testament, 11th chapter of John, 35th verse.—[London paper.]

Animal Mechanics, or Proofs of Design in the Animal Frame. [From the Library of Useful Knowledge.]

INTRODUCTION.

To prepare us for perceiving design in the various internal structures of an animal body, we must first of all know that perfect security against accidents is not consistent with the scheme of nature. A liability to pain and injury only proves how entirely the human body is formed with reference to the mind; since, without the continued call to exertion, which danger and the uncertainty of life infer, the development of our faculties would be imperfect, and the mind would remain, as it were, uneducated.

The contrivances (as we should say of things of art,) for protecting the vital organs, are not absolute securities against accidents; but they afford protection in that exact measure or degree calculated to resist the shocks and pressure to which we are exposed in the common circumstances of life. A man can walk, run, leap, and swim, because the texture of his frame, the strength and power of his limbs, and the specific gravity of his body, are in relation with all around him. But were the atmosphere lighter, the earth larger, or its attraction more—were he, in short, an inhabitant of another planet,—there would be no correspondence between the strength, gravity, and muscular power of his body, and the elements around him, and the balance in the chances of life would be destroyed.

Without such considerations the reader would fall into the mistake that weakness and liability to fracture imply imperfection in the frame of the body, whereas a deeper contemplation of the subject will convince him of the incomparable perfection both of the plan and of the execution. The body is intended to be subject to derangement and accident, and to become in the course of life more and more fragile, until, by some failure in the frame-work or vital actions, life terminates.

And this leads us to reflect on the best means of informing ourselves of the intention or design shown in this fabric. Can there be any better mode of raising our admiration than by comparing it with things of human invention? It must be allowed, that we shall not find a perfect analogy. If we compare it with the forms of architecture—the house or the bridge are not built for motion, but for solidity and firmness, on the principle of gravitation. The ship rests in equilibrium prepared for passive motion, and the contrivances of the ship-builders are for resisting an external force: whilst in the animal body we perceive securities against the gravitation of the parts, provisions to withstand shocks and injuries from without, at the same time that the frame-work is also calculated to sustain an internal impulse from the muscular force which moves the bones as levers, or, like a hydraulic engine, propels the fluids through the body.

As in things artificially contrived, lightness and motion are balanced against solidity and weight, it is the same in the animal body.

A house is built on a foundation immovable,

and the slightest shift of the ground, followed by the ruin of the house, brings no discredit on the builder; for he proceeds on the certainty of strength from gravitation on a fixed foundation. But a ship is built with reference to motion, to receive an impulse from the wind, and to move through the water. In comparison with the fabric founded on the fixed and solid ground, it becomes subjected to new influences, and in proportion as it is fitted to move rapidly in a light breeze, it is exposed to founder in the storm. A log of wood, or a Dutch dogger, almost as solid as a log, is comparatively safe in the trough of the sea during a storm—when a bark, slightly built and fitted for lighter breezes, would be shaken to pieces: that is to say, the masts and rigging of a ship (the provisions for its motion) may become the source of weakness, and, perhaps, of destruction; and safety is thus voluntarily sacrificed in part, to obtain another property of motion.

So in the animal body: sometimes we see the safety of parts provided for by strength calculated for inert resistance; but when made for motion, when light and easily influenced, they become proportionally weak and exposed, unless some other principle be admitted, and a different kind of security substituted for that of weight and solidity: still a certain insecurity arises from this delicacy of structure.

We shall afterwards have occasion to show that there is always a balance between the power of exertion and the capability of resistance in the living body. A horse or a deer receives a shock in alighting from a leap; but still the inert power of resisting that shock bears a relation to the muscular power with which they spring. And so it is in a man: the elasticity of his limbs is always accommodated to his activity; but it is obvious, that in a fall, the shock, which the lower extremities are calculated to resist, may come on the upper extremity, which, from being adapted for extensive and rapid motion, is incapable of sustaining the impulse, and the bones are broken or displaced.

The analogy between the structure of the human body and the works of human contrivance, which we have to bring in illustration of the designs of nature, is, therefore, not perfect; since sometimes the material is different, sometimes the end to be attained is not precisely the same; and, above all, in the animal body a double object is often secured by the structure or frame-work, which cannot be accomplished by mere human ingenuity, and of which, therefore, we can offer no illustration strictly correct.

However ingenious our contrivances may be, they are not only limited, but they present a sameness which becomes tiresome. Nature, on the contrary, gives us the same objects of interest, or images of beauty, with such variety, that they lose nothing of their influence and their attraction by repetition.

If the reader has an imperfect notion of design and providence, from a too careless survey of external nature, and the consequent languor of his reflections, we hope that the mere novelty of the instances we are about to place before him may carry conviction to his mind; for we are to draw from nature still, but in a field which has been left strangely neglected, though the nearest to us of all, and of all the most fruitful.

Men proceed in a slow course of advancement in architectural, or mechanical, or optical sciences; and when an improvement is made, it is found that there are all along examples of it in the animal body, which ought to have been marked before, and which might have suggested to us the improvement. It is surprising that this view of the subject has seldom, if ever, been taken seriously, and never pursued. Is the human body formed by an all-perfect Architect, or is it not? And, if the question be answered in the affirmative, does it not approach to something like infatuation, that possessing such perfect models as we have in the anatomy of the body, we yet have been so prone to neglect them?

We undertake to prove that the foundation of the Eddystone lighthouse, the perfection of human architecture and ingenuity, is not formed on principles so correct as those which have directed the arrangement of the bones of the foot; that the most perfect pillar or kingpost is not adjusted with the accuracy of the hollow bones which support our weight; that the insertion of a ship's mast into the hull is a clumsy contrivance, compared with the connections of the human spine and pelvis; and that the tendons are composed in a manner superior to the last patent cables of Huddart, or the yet more recently improved chain-cables of Bloxam.

Let us assume that the head is the noblest part; and let us examine the carpentry and architectural contrivances exhibited there.

But before we give ourselves up to the interest of this subject, it will gratify us to express our conviction, that the perfection of the plan of animal bodies, the demonstration of contrivance and adaptation, but more than these, the proof of the continual operation of the power which originally created the system, are evinced in the property of life,—in the adjustment of the various sensibilities,—in the fine order of the moving parts of the body,—in the circulation of living blood,—in the continual death of particles, and their removal from the frame,—in the permanence of the individual whilst every material particle of his frame is a thousand times* changed in the progress of his life. But this is altogether a distinct inquiry, and we are deterred from touching upon it, not more from knowing that our readers are not initiated into it, than from the depth and very great difficulty of the subject.

CHAPTER I.

ARCHITECTURE OF THE SKULL.—It requires no disquisition to prove that the brain is the most essential organ of the animal system, and being so, we may presume that it must be especially protected. We are now to inquire how this main object is attained?

We must first understand that the brain may be hurt, not only by sharp bodies touching and entering it, but by a blow upon the head, which shall vibrate through it, without the instrument piercing the skull. Indeed, a blow upon a man's head, by a body which shall cause a vibration through the substance of the brain, may more effectually deprive

* The old philosophers gave out that the human body was seven times changed during the natural life. Modern discoveries have shown that the hardest material of the frame is changing continually; that is, every instant of time from birth to death.

him of sense and motion, than if an axe or a sword penetrated into the substance of the brain itself.

Supposing that a man's ingenuity were to be exercised in contriving a protection to the brain, he must perceive that if the case were soft, it would be too easily pierced; that if it were of a glassy nature, it would be chipped and cracked; that if it were of a substance like metal, it would ring and vibrate, and communicate the concussion to the brain.

Further thoughts might suggest, that whilst the case should be made firm, to resist a sharp point, the vibrations of that circular case might be prevented by lining it with a softer material; no bell would vibrate with such an incumbance—the sound would be stopped like the ringing of a glass by the touch of a finger.

If a soldier's head be covered with a steel cap, the blow of a sword which does not penetrate will yet bring him to the ground by the percussion which extends to the brain; therefore, the helmet is lined with leather, and covered with hair, for, although the hair is made an ornament, it is an essential part of the protection: we may see it in the head-piece of the Roman soldier, where all useless ornament, being despised as frivolous, was avoided as cumbrous.

We now perceive why the skull consists of two plates of bone, one external, which is fibrous and tough, and one internal, dense to such a degree that the anatomist calls it *tabula vitrea* (the glassy table).

Nobody can suppose this to be accidental. It has just been stated that the brain may be injured in two ways: a stone or a hammer may break the skull, and the depressed part of the bone injure the brain; whilst, on the other hand, a mallet struck upon the head will, without penetrating, effectually deprive the brain of its functions, by causing a vibration which runs round the skull, and extends to every portion of its contents.

Were the skull, in its perfect or mature state, softer than it is, it would be like the skull of a child; were it harder than we find it is, it would be like that of an old man. In other words, as in the former it would be too easily pierced, so in the latter it would vibrate too sharply and produce concussion. The skull of an infant is a single layer of elastic bone; on the approach to manhood it separates into two tables; and in old age it again becomes consolidated. During the active years of man's life the skull is perfect: it then consists of two layers, united by a softer substance; the inner layer is brittle as glass, and calculated to resist any thing penetrating; the outer table is tough, to give consistence, and to stifle the vibration which would take place if the whole texture were uniform and like the inner table.

The alteration in the substance of the bones, and more particularly in the skull, is marvellously ordered to follow the changes in the mind of the creature, from the heedlessness of childhood to the caution of age, and even the helplessness of superannuation.

The skull is soft and yielding at birth; during childhood it is elastic, and little liable to injury from concussion; and during youth, and up to the period of maturity, the parts which come in contact with the ground are thicker, whilst the shock is dispersed towards the sutures (the seams or joinings of the pieces,) which are still loose. But when,

with advancing years, something tells us to give up feats of activity, and falls are less frequent, the bones lose that nature which would render concussion harmless, and at length the timidity of age teaches man that his structure is no longer adapted to active life.

We must understand the necessity of the double layer of the skull, in order to comprehend another very curious contrivance. The sutures are the lines of union of the several bones which form the *cranium**, and surround and protect the brain. These lines of union are called *sutures*, (from the Latin word for *sewing*,) because they resemble seams. If a workman were to inspect the joining of two of the bones of the cranium, he would admire the minute dovetailing by which one portion of the bone is inserted into, and surrounded by, the other, whilst that other pushes its processes or juttings out between those of the first in the same manner, and the fibres of the two bones are thus interlaced, as you might interlace your fingers. But when you look to the internal surface, you see nothing of this kind; the bones are here laid simply in contact, and this line by anatomists is called *harmonia*, or harmony. Architects use the same term to imply the joining by masonry. Whilst the anatomists are thus curious in names, it is provoking to find them negligent of things more interesting. Having overlooked the reason of the difference in the tables of bones, they are consequently blind to the purpose of this difference of the outward and inward part of a suture.

Suppose a carpenter employed upon his own material, he would join a box with minute and regular indentations by dovetailing, because he knows that the material on which he works, from its softness and toughness, admits of such adjustment of its edges. The processes of the bone shoot into the opposite cavity with an exact resemblance to the foxtail wedge of the carpenter—a kind of tenon and mortice when the pieces are small.

But if a workman in glass or marble were to inclose some precious thing, he would smooth the surfaces and unite them by cement, because, even if he could succeed in indenting the line of union, he knows that his material would chip off on the slightest vibration. The edges of the marble cylinders which form a column are, for the same reason, not permitted to come in contact; thin plates of lead are interposed to prevent the edges, technically termed *arries*, from chipping off or splitting.

Now apply this principle to the skull. The outer softer tough table, which is like wood, is indented and dove tailed; the inner glassy table has its edges simply laid in contact. It is mortifying to see a course of bad reasoning obscure this beautiful subject. They say that the bone growing from its centre, and diverging, shoots its fibres betwixt those which come in an opposite direction; thus making one of the most curious provisions of nature a thing of accident. Is it not enough to ask such reasoners, why there is not a suture on the inside as well as on the out?

* *Cranium*, from a Greek word, signifying a helmet. The cranium is the division of the skull appropriated to the protection of the brain; it consists of six bones—the *frontal* (or forehead); two *parietal* (walls or side bones); the *occipital* (back of the head); and two *temporal* (or temple) bones.

The junction of the bones of the head generally being thus exact, and like the most finished piece of cabinet work, let us next inquire, whether there be design or contrivance shown in the manner in which each bone is placed upon another.

Fig. 1.



A, the parietal bone; B, the frontal bone; C, the occipital bone; D, the temporal bone; E, the sphenoid bone.

When we look upon the side of the skull thus, the temporal suture betwixt the bones A and D is formed in a peculiar manner; the lower or temporal bone laps over the superior or parietal bone. This, too, has been misunderstood: that is to say, the plan of the building of the bones of the head has not been considered, and this joining, called the squamous* suture, which is a species of scarfing, has been supposed a mere consequence of the pressure of the muscle which moves the jaw.

Dr. Monro says, "the manner how I imagine this sort of suture is formed at these places, is that, by the action of the strong temporal muscles on one side, and by the pressure of the brain on the other, the bones are made so thin that they have not large enough surfaces opposed to each other to stop the extension of their fibres in length, and thus to cause the common serrated appearance of sutures; but the narrow edge of the one bone slides over the other."

The very name of the bones might suggest a better explanation. The *ossa parietalia*† are the two large bones in a regular square, serving as walls to the interior, or room of the head, where the brain is lodged. (See A, in the foregoing figure.)

* From *squama*, the Latin for a scale, the thin edges lying over each other like the scales of a fish.

† From the Latin word *paries*, a wall.

‡ In the second Treatise on Heat, the reader will find an account of the manner in which the expansion of iron by heat, and its subsequent contraction on cooling, is used in order to cog great buildings.

(To be continued.)

AGRICULTURE, &c.

[From the New-York Farmer.]

DRAINING.—In low lands, where furrows are substituted for under drainings, it is calculated that the loss of seed in the furrows, and the superiority of the crops, would, in two years, pay the expense of the draining.

SUGAR FROM BEETS.—A writer in Goodsell's Farmer, who has been engaged in constructing machinery for the manufacture of this sugar in Europe, proposes to commence business at Rochester. He makes the following calculation:

Cost of producing an acre,	\$20 00
Cost of manufacturing do.,	40 00
	60 00.
Amount of sugar produced,	151 20
Value of pulp remaining,	6 00
	157 20
Nett profit per acre,	\$97 20

The Farmer's Magazine, conducted by the Editor of the Mark Lane Express. London.
[Continued from page 42.]

TURNIPS TO THE ACRE.—Loudon, in his late tour of Scotland, says, the cultivation of turnips in rows is carried to so high a degree of perfection in Scotland, that 30 tons of Swedish turnips are calculated on to the statute acre.

BEST ROOT SUGAR.—The decrees of Bonaparte brought a hundred thousand acres yearly under cultivation of beets for sugar. A great oversight of the French government was to compel every farmer to devote a portion of his land to this root, without fixing some obligation on the manufacturers to pay a remunerating price. The consequence was, that the farmers were wholly at the mercy of the manufacturers.

"To the manufacturer, we are told, the profit was ample; an equal quantity of sugar with that of the West Indies—which at that time sold for *five shillings* a pound, could be produced on the spot from mangel wurtzel at *less than one shilling* per pound! and to such perfection had the sugar thus made arrived, that the prefect, mayor, and some of the chief persons of Bruges, who were invited by a manufacturer to witness the result of his experiments, allowed the specimens which he produced to exceed those of the foreign sugar!

"The British people are really of opinion that Napoleon's novel project *entirely failed*, and that our continental friends are still indebted to their colonies for the immense supplies of sugar they annually consume. They will be surprised to know, that not only does the manufacturer continue to thrive, but that the produce is abundantly ample to satisfy all the wants of the people, *independently of any supplies from abroad*, and that the French Minister of Commerce has deemed the time to have arrived, when beet-root sugars shall be made subservient to the fiscal necessities of the State.

"In 1823, it seems, 58 establishments for the manufacture of sugar in France were known to be in activity, and 50 more in process of construction; and it was these ascertained facts that induced the Government to reflect 'whether the time had not come for making the domestic sugars bear a part of the burden before laid exclusively upon the exotic ones.'

"In the inquiry that was instituted in 1828, when it was attempted to remove the difficulties which attended the fixing a tariff on sugars, it was stated, that 'if the tariff is not changed, and no extraordinary event happens, *five years* will be enough to enable the beet-root establishments to produce enough for the whole consumption of France! and in ten years to compete with the colonies on equal terms! or rather the colonies will not be able to contend with them; for the kilogramme of domestic sugar can then be afforded at 60 cents, i. e. the price which the sugar from the cane necessarily costs in the colony itself, and to which must be added freight, insurance, and commission.

"The manufacture of sugar from the beet-root is concentrated principally in the three departments of le Nord, la Somme, and le Pas-de-Calais, where the land is well fitted for the kind of culture which it requires. The *worst* produces 12,000 kil.* of beets per acre, (query *hectare*, 2 a. 1 r. 30 p.); the *best*, 60,000! There are some establishments in other departments, even in the South, but they are not in the way of increase, since the beets are in general in that part of France watery and barren of sugar.

"As an useful auxiliary to agriculture, this branch of manufacture is justly extolled for the excellent means which it offers for improving the soil; bringing it from the fallow, un-

productive state; and (in the opinion of a distinguished French agriculturist) as being about to produce, in the national economy, one of those happy revolutions whose importance is not always felt at the time, but which posterity will note as the cause of the greatest commercial and agricultural prosperity."

NEW-ZEALAND FLAX, *Phormium Tenax*.—This plant stands the winter of England. In 1828 only 60 tons, valued at 2,600 pounds sterling, were imported from Sydney into Great Britain. In 1830 there were 841 tons, and in 1831 1,062 tons. Its price in London is 15 to £25 per ton. The flax is prepared by the natives, and in strength and whiteness of fibre is superior to any analogous material.

FOOD FOR HORSES.—We often hear such and such food recommended, because it contains much nutritive property, chemically ascertained, without any regard to the bulk, or its adaptation to the digestive powers of the animal. One reason why oats are so much esteemed as food for horses is, that they have more bulk than most other grains. We make an extract from Mr. Dick's opinion.

"Under this view of the subject, it will be seen that a moderate proportion of nutritious food is only required, and that it is advisable to present it in as small a compass as will suit the nature of the digestive organs. But it would appear that a certain proportion of bulk is also necessary to the quantity of nutritious matter to keep up the proper action of the bowels. If the food is too rich and too much concentrated, it deranges the stomach and bowels, and produces disease; if too poor and bulky, it yields not the proper degree of support to the animal, while its bulk impedes respiration, and its weight detracts by its burdensomeness from the capability of the animal exerting himself. From these remarks, it will appear obvious that the grand desideratum is to give food containing as much nutriment, and in as small bulk, as is consistent with the economy of the animal."

CULTIVATION IN THE UNITED KINGDOM.—The following statement will be found interesting, as exhibiting the number of acres in cultivation in the United Kingdom, and the different purposes specified, for which they are employed in England and Wales, as well as the number of farms, and the annual amount of property derived from agriculture:

	Cultivated Acres.	Uncultivated Wastes.	
		Capable of Improvement.	Barren and uncultivable.
			Total.
England,	25,632,000	3,454,000	3,956,400
Wales,	3,117,000	530,000	1,105,000
Scotland,	5,965,000	5,950,000	8,523,930
Ireland,	12,525,280	4,500,000	2,416,664
British Isles,	383,000	160,000	509,400
Total,	46,992,970	14,600,000	15,871,403
			77,374,433

In England and Wales it is calculated that there are 3,250,000 acres employed in the cultivation of wheat; 1,250,000 acres in that of barley and rye; 3,200,000 acres in that of oats, beans, peas; 1,200,000 acres in that of clover, rye grass, &c.; 1,200,000 acres in that of roots and cabbages, cultivated by the plough; 2,100,000 acres in that of fallows; 47,000 acres in that of hop grounds; 18,000 acres in that of pleasure grounds; 17,300,000 acres in that of pastured by cattle; 1,200,000 acres in that of hedge-rows, copses, and woods; 1,300,000 acres in that of ways and water courses, &c.; 5,029,000 acres in that of common and waste lands. Total of England and Wales, 37,094,000 acres.

SUBSTITUTION OF INANIMATE FOR ANIMATE POWER.—This is an important subject, and will, in all human probability, effect much change in the value of horses. The Journal of Elementary Locomotion estimates, on the cal-

culatation that £216,817,624 is the value of the agricultural produce of Great Britain, the saving of upwards of 120 millions yearly, by the substitution of inanimate for animate power.

It is calculated that out of the 1,800,000 horses in the United Kingdom, that the horses used *bona fide* for husbandry amount to 852,663. To these we will add 88,512, being the half of the number estimated as *not wholly* used for the same purpose.

The annual keep of ditto at £29 14s. per head, amounts to	£24,097,837 10 0
Duty upon ditto	725,433 5 0
Interest upon these items, at £5 per cent.	1,241,163 0 14
Add the 14th part of £10, 818,298 13s. 4d. the capital sunk in the above horses, at the average of £13 6s. 8d. each, for average loss of life annually	772,730 9 64
Farriery and other incidental expenses, £1 pr head	811,385 0 0

Total, £27,648,539 4 8

We might add to this also the horses kept by small farmers, calculated to amount to 38,010, the annual approximating expenditure upon which would make the grand total equal to £33,000,000; which sum, at the least, would be saved to the growers by the cheaper mode of agriculture which the substitution of inanimate for animate power will effect.

This, perhaps, is greatly undervalued. Mr. Dupin, founder of the Mechanic Institute of France, in a comparative estimate of the amount of animate and inanimate force, applied to agriculture, in France and Great Britain, states the latter as follows:

Human race, 5,000,000, equivalent to 2,132,446 effective laborers.

Horses of full growth 1,250,000, equivalent to 8,750,000.

Whilst an authority of the highest consideration at home makes the brute labor employed in our husbandry to be ten times more than the human. In either case, allowing that a horse will do the work of six men, the suppression of brute force will, upon an approximating calculation, save nearly two-thirds of the annual expense of raising the food of the country.

The Farmer's Register. Edmund Ruffin, Editor and Proprietor. Richmond, 1833.

This is a monthly periodical of sixty-four closely printed large octavo pages, at five dollars per annum—principally devoted to southern agriculture, but more especially to that of Virginia.

The relative wealth and influence of the 'old dominion' have not been sustained, owing to the improvements in agriculture in the more Eastern States, to the virgin fertility of the Western, and to the internal improvements and prosperity of manufactures in all these States. Besides these causes of comparative decline, there has been an actual diminution of resources, arising principally from an exhausting system of cultivating the soil. We could scarcely believe that a section of our country so distinguished for intelligent and eminent men, could have pursued a course of cropping so wretched—founded on no higher philosophy than that it was the custom of forefathers. Field after field was cleared and kept under the plough without a single ameliorating crop, until from three to ten bushels of wheat were considered, on many estates, a crop equal to expectation. The exhausted condition of the soil compelled thousands to bid farewell to their native fields

* The kilogramme is 2 lbs. 3 oz. 5 drachms and 28 grains over. It is usual in speaking of 100 kilogrammes, to estimate them at 223 lbs.; or, in reference to approximate numbers, to consider the 100 kilogrammes as 2 cwt. English.

and vales, and seek those in the far West that were under the culture of nature. Thus farm after farm was left to be overgrown with weeds, and to serve as monuments of a deficiency in agricultural science. In this state of general depression of landed property, Mr. Ruffin steps forth and calls the attention of Virginians to calcareous manures. This is succeeded by the publication of his *Farmers' Register*—the old dominion begins to awake—Innumerable localities and inexhaustible quantities of marl are discovered east of the mountains—and now thousands are on the march of improvement. This ancient and renowned State is destined once more to rise in its strength and vigor. If Mr. R. continues to persevere and prosper, he will, in less than twenty years, be acknowledged as one of Virginia's greatest benefactors.

We shall proceed to make a few abridged notices and extracts, that will give our readers an idea of the work.

CLOVER AND THE FOUR-SHIFT SYSTEM.—The following may serve as one of the many excellent examples that the *Register* is bringing to the light of open day.

In the year 1816, Mr. James M. Selden took charge of Woods' farm, of 250 acres of arable land, the remaining 300 acres being all swamp land, subject to the inundation of the tides. Previous to his taking charge of the estate, it had been managed by overseers for a great number of years, under this disastrous system of three fields. To those who are acquainted with the character of the soil in the neck, it would be superfluous to say much. I shall therefore only state, that it possesses all the qualities of our best loam lands, only perhaps to a greater degree than any other within my knowledge: and probably would bear this harsh and bad treatment to a greater extent than most other soils. Under this three-field rotation, the crops on this estate were never more than 3 or 400 bushels of wheat, and from 100 to 120 barrels of corn. He at once saw that to persevere in this system of cultivation was to work for nothing, and finally to be left in utter poverty, so he resolved on a change to the four-field and fallow system. The crops, after the adoption of this change, were in every rotation increased to double, and in a very few years to five or six times the quantity.

THE WEEVIL.—There is a long communication in the November number on this subject. The preventive found most successful was to thrash the wheat early, and to spread it where it may not heat so much as to hatch the insect.

ORNAMENTAL TREES.—Of this class, deciduous trees are preferable to evergreens—because they preserve our dwellings from the solar heat in summer, but admit it in winter, when it adds to our comfort. The variety caused by the change of the seasons in the foliage of trees, from the first budding to the fall of the brown and golden leaves of autumn, also serves to relieve the mind from the dull uniformity or the cone-bearing and resinous ever greens.

TO SAVE THE SHOULDERS OF HORSES FROM BEING CHAFED BY THE COLLAR.—Some of the gentlemen of South Carolina are in the habit of making long journeys by land in their own conveyances, and are obliged to resort to every method of affording relief to their horses. From one of these I derived the following simple expedient for preventing the shoulders of harness horses from being chafed by the collar. The shrewd practical sense of the gentleman referred to is a strong guarantee of the value of his suggestions. A short trial of my own has fully convinced me of the utility of what is classically denominated the sweater.

This simple and effectual contrivance is made of two pieces of leather, which, for an ordinary horse, may be about 5½ inches wide at the top, 6 at the bottom, and 9 at the greatest protuberance, the front edge being straight, the posterior curved with a gradual swell adapted to the shape of the collar behind. These pieces must be sewed together at the bottom, and connected at top by two small straps and buckles, so as to be let out or taken up at will. The lower part must be so shaped as to fit the throat of the horse. A strap passes from the bottom of the sweater between the legs to the girth, by means of which it is kept in place. The strap should not be too tight, lest it might incline a balking horse to stop, when ascending a hill; and the buckle at the end near the girth, if it chafe, may be covered. The leather should be tolerably stout upper, rendered pliant by the occasional application of tallow to the outside. The inner side should be kept clean and smooth.

The sweater is in fact a sheath for the shoulders, and the collar rests on it instead of the skin of the animal. H.

Waynesborough, Va. Oct. 4th, 1833.

PREPARATION OF SEED WHEAT.—When I am about to commence seeding, I have two barrels prepared, one of which I have filled about two-thirds full with brine, strong enough to bear an egg, into which I have the seed poured very slowly, until the brine rises nearly to the top, which will be covered with the light grains of wheat, cheat and garlic, which are skimmed off with the hands, and the wheat at the bottom stirred once or twice to free it from any remaining impurities, which are again skimmed off. An old basket without a handle is then placed on the top of the empty barrel, through which the brine is poured from the wheat by two men taking the full barrel by its bottom on opposite sides. The wheat is then emptied into a large box, and the same process repeated from one barrel to the other alternately, until a sufficient quantity is washed for the day's seeding, and as much gypsum is then stirred into the whole mass as will adhere to the grain. Water is added occasionally, and a sufficiency of salt to maintain the strength of the brine, which is tested by an egg kept at hand for the purpose. The whole process is completed in the morning, by the time the teams are ready to proceed to their work. I suppose a bushel of salt would probably suffice for one hundred bushels of seed, which would, by reason of its invigorating qualities, be very well bestowed in that way, independently of its aid in freeing the wheat from its impurities.

F. H.

N. B. If the wheat is infected with smut, it will be effectually destroyed, by stirring in a portion of quick-lime before the gypsum.

BUCKWHEAT.—In a translation of an article from Rozier's *Cours Complet*, we make the following extract:

Besides the common buckwheat of which we have spoken, there is a species considered preferable, which is known by the name of buckwheat of *Tartary*, or of *Siberia*, and which was in 1782 much extolled by M. Martin. This variety, which has been brought from Siberia by a missionary of Low Maine, is especially suitable to the north of France: it is more hardy than the common kind; it is less inclined to lodge, and produces more. The grain is smaller, the stalk more yellow, and more solid. According to M. Curant, who calls this grain *Martin-Corn*, (in honor of M. Martin, of whom we have spoken,) the Siberian buckwheat fears neither hot winds nor white frosts; it gives for one seed sown, nearly two thousand in rich soils—and elsewhere, from fifty to three hundred and more; it makes a better meal, and can be kept as well and as long as that from wheat. These incontestable advantages are accompanied by some inconveniences: in the first place, the Siberian buckwheat shatters in reaping still more easily than the common, and consequently demands an increase of precau-

tions; then it grinds almost as slowly as rye, and it ought not to be sowed until July, a time when the hay harvest draws so heavily on the labor of the farmer.

MAGNESIAN MARL.—Among the numerous beds of Marl, a correspondent of the *Register* gives an account of one which Mr. Ruffin found to contain 50 per cent. of carbonate of lime, and 31 of carbonate of magnesia. Magnesia in lime is considered by many as injurious to vegetation. Mr. R. has collected much, both *pro* and *con*. When used in moderate quantities, the testimony appears to be in its favor. On richer soils it will be used in greater quantities. Sir H. Davy explains this on the fact that magnesia has much less affinity for carbonic acid than lime has; and, consequently, as long as any caustic lime remains, the magnesia will not combine with carbonic acid, and thus remain, caustic, and poisonous or hurtful to plants. For a rich soil more carbonic acid gas is disengaged, and unites with it.

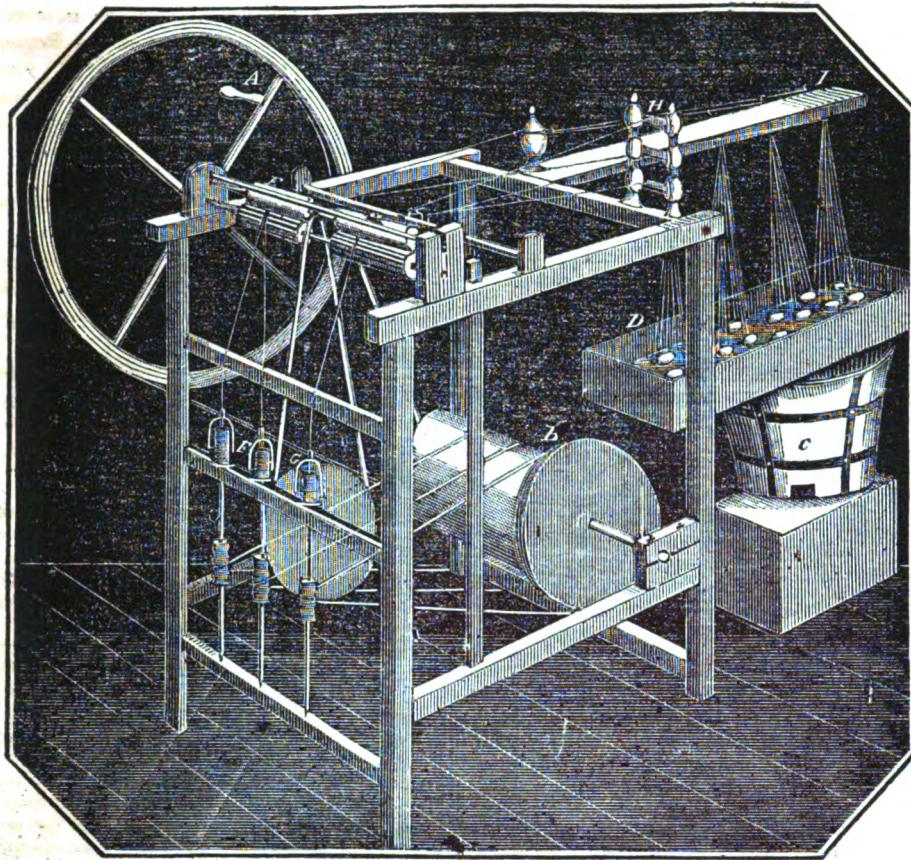
EASY METHOD OF SOWING GRASS SEEDS.—I had a piece of sheet iron about four feet long and twenty inches wide, punched with small holes at distances of about half an inch or three quarters each way, and then made into a cylinder similar to a stove pipe. An axle passes through the cylinder, on each end of which is attached a wooden wheel of double the diameter of the cylinder, and on each end of the axle-tree are fixed the handles or frame, by which the machine can either be pulled after, or rolled before the seedman, as he may prefer. A cylinder four feet long and six inches diameter will hold rather more than a half bushel of seed, and will sow about a bushel to the acre.* Here let me observe that the seed should be very nicely sifted—for if there be much filth or chaff left in the seed, they will not be sowed thick enough. The seed may be put into the cylinder either by taking off one wheel or by having a door cut in the cylinder, after the manner of the barrel churn.

Since using this grass sower, (if I may so call it,) I find the grass is sowed more regularly—that much time and labor is saved, and it is almost impossible for the wind to affect the seed at all, since they are nearly touching the ground by the time they are out of the box.

* The holes should be about the size of those commonly punched in tin for safes.

SALT A MANURE FOR COTTON.—Alexander Jones, M. D., recommends, in the *American Farmer*, the use of salt as a manure to improve the staple of cotton. He says, if sea island cotton be planted for several years in succession in the interior of the country, it degenerates into the short staple cotton. In support of the benefit from salt, it is said that cotton in the vicinity of salt springs and licks is of a larger staple.

INDIAN MEAL BREAD.—Take as much corn meal as is wanting for use, sift it through a hair sifter, put it in an iron pot, and pour on it boiling water; stir it with a spatula or ladle till it becomes well mixed and quite thin; this being night, let it remain in the same vessel till morning, and if kept warm it will be well fermented, (which is necessary.) Then put it in what is called a Dutch oven, it being hot before the dough is put in it; apply good live coals on the lid of the oven and under it, being careful not to burn the bread. When thus prepared, if done carefully and according to this recipe, more wholesome and better bread cannot be used for breakfast. I think it an anti-dyspeptic, as no lard or butter is used in preparing the bread, though after it is cooked, good fresh butter adds to its flavor.—[*American Farmer*.]



Manufacture of Silk—Reeling, Twisting from the Cocoon—Description and Drawing of Brooks' Silk Machine. [From the New-York Farmer.]

The manufacture of silk is so likely to become an important branch of national industry, that we deem it important to lay before our readers all the information that we can obtain.

On the present occasion, we shall simply state the particulars of an experiment with Mr. Adam Brooks' machine.

REFERENCES.—A, the handle of the crank, giving motion to the machine. There is a band around the large wheel, passing around a small wheel attached to the axis of the cylinder or drum. B, the drum or cylinder, around which the bands giving motion to the spindles pass. C, the furnace for heating to blood heat the water in the pan D, containing the cocoons. E, the rollers regulating the supply of thread given to the spindles. F, the two spindles for twisting the single threads. G, the spindle for the double twisting or sewing silk. H, the two upright pillars supporting the bobbins containing the single thread to be double twisted. J, a projecting slat, containing the leading wires to receive the threads from the cocoons in the pan D.

After considerable inquiry for cocoons in this section of the country, we were enabled to obtain a bushel that had been, two years ago, sent on to this city, from one of the Southern States, for a market. In consequence of there being no demand for them, they had been put aside as a worthless article. They were in a box rendered tight by paper pasted over the openings at the joinings of the boards. Some of the cocoons were perforated by an insect not unlike the common moth; but generally they were in excellent order.

All the practical information we had had, was from seeing Mr. Brooks exhibit his machine in operation a few times. In connection with another person, whose opportunities of practical knowledge were no greater than our own, we took a peck of the cocoons, 135 in number, and weighing ten ounces. Without assorting them, as we should have done, we put a handful of some 20 or 40 into water about boiling hot—took a small broom and pressed them into

the water—found the floss silk adhering to the broom—gathered the silk from the broom, and kept drawing the silk until a fibre ran off singly and evenly from each cocoon—lifted these running cocoons from the water with an instrument not half so convenient as a skimmer, and placed them in a winding basin partly filled with heated water—served other cocoons in the same manner until we acquired two threads of about 100 fibres or cocoons, and carried the threads through the guide wires, between the rollers, to the bobbins. Thus prepared, we began to wind by turning the wheel, keeping up the thickness of the thread by supplying additional cocoons, and collecting and attaching the ends of those that had broken. After a sufficient quantity was on the bobbins, took them and placed them in the upright posts, and carried the ends through the guides and rollers to the bobbin, for the purpose of doubling and twisting. Replacing the bobbins with two more, we then, by turning the wheel, wound, doubled, and twisted the silk at one operation. Thus continuing, we obtained from the peck 14 ounces of fine sewing silk, which, when deprived of the gum, by being several times boiled in soap suds, weighed one ounce. Besides this, there were 4½ ounces of floss silk obtained from the gathering of the silk from the broom, from cocoons that would not wind, and from those that had been injured by insects, or imperfectly formed. These 4½ ounces, after having been cleansed in soap suds, weighed 3 ounces. This floss silk is to be carded and spun for stockings and other purposes.

The sewing silk being very fine, did not, owing to the improper adjustment of the machine, give a sufficient twist; in other respects it was pronounced a fair, saleable article. When it is considered that we were entirely green at the business, were several times obliged, as soon as we got into operation, to omit our labors for another day, and were not in possession of the conveniences for producing a good article, our readers will perceive that the manufacture of silk for common domestic purposes is not more difficult than to spin flax or wool, which was formerly done by the females of almost every farmer's family in the country.

Our lowest estimate of the value of the bushel

when made into sewing and floss silk, is \$4.50. Our information, however, relative to its price, is derived from books and personal inquiries, and is extremely varied, and often contradictory. One thing is very certain, that if \$2.50 to \$3.50 per bushel for the cocoons is a remunerating price to the farmer, the manufacture of them into silk in his own family must be very profitable.

The machine, the drawing of which accompanies this article, is the invention of Mr. Adam Brooks, of Scituate, Mass. It is admirably adapted for families, when sewing silk is intended to be made. The one we used is a beautiful machine, made of mahogany, in a substantial and workmanlike manner. It cost \$28. Those of hard but less costly wood, and thoroughly made, are \$25. With an additional bobbin, \$30 and \$26.

Machines made by the inventor may be had of the agents, H. Huxley and Co. 81 Barclay street.

RELATIVE CLAIMS OF AGRICULTURE.—Mr. Whitaker's views correspond so well with our own that we cannot refrain from giving another extract.

"But agriculture," says he, "contributes liberally to the constant demands, and not to the occasional wants of society—to the indispensable and never varying necessities of mankind at large, and not simply to the incidental and extraordinary calls of individuals. In this point of view, therefore, Agriculture prefers claims to a far higher consideration than either Law or Medicine. And if the question were put, which is best calculated to enlarge and liberalize the mind, the decision, I imagine, must again be in favor of Agriculture—of Agriculture, however, not degraded to a despicable rank, but raised to that high elevation where good sense and a just philosophy would place it. Even its humblest duties, I maintain, are performed under circumstances favorable to the development of a refined enthusiasm:

—Ask the swain

Who journeys homeward from a summer day's
Long labor, why, forgetful of his toils,
And due repose, he lingers to behold
The sunshine—gleaming as through amber clouds
O'er all the Western sky; full soon I ween,
His rude expressions and untutored airs,
Beyond the power of language, will unfold
The form of beauty smiling at his heart.
How lovely! how commanding!"

NEW-YORK AMERICAN.

JANUARY 25—FEBRUARY 1, 1834.

HOME INTELLIGENCE.

NAVY APPROPRIATION BILL.—We publish this as a bill of general interest and which has become a law.

AN ACT making appropriations for the naval service for the year one thousand eight hundred and thirty-four.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress Assembled, That the following sums be appropriated for the naval service for the year one thousand eight hundred and thirty-four in addition to the unexpended balances of former appropriations for similar objects, viz.

For pay and subsistence of the officers of the navy and pay of seamen, one million four hundred and eighty-seven thousand two hundred and forty-four dollars and twenty-one cents.

For pay of superintendents, naval constructors, and all the civil establishments at the several yards, sixty-one thousand one hundred and eighty dollars.

For provisions, four hundred and fifty thousand dollars.

For the repairs of vessels in ordinary, and the repairs and wear and tear of vessels in commission, five hundred and ninety thousand dollars.

For medicines and surgical instruments, hospital stores, and other expenses on account of the sick, forty thousand dollars.

For the improvement and necessary repairs of the navy yard at Portsmouth, New Hampshire, forty thousand seven hundred dollars.

For the improvement and necessary repairs of the navy yard at Charlestown, Massachusetts, eighty-six thousand three hundred dollars.

For the improvement and necessary repairs of the navy yard at Brooklyn, New York, fifty-seven thousand five hundred dollars.

For the improvement and necessary repairs of the navy yard at Philadelphia, six thousand five hundred and fifty dollars.

For the improvement and necessary repairs of the navy yard at Washington, twenty-nine thousand five hundred dollars.

For the improvement and necessary repairs of the navy yard at Newport, Virginia, one hundred and eight thousand two hundred and fifty dollars.

For the improvement and necessary repairs of the navy yard at Pensacola, twenty-six thousand dollars.

For ordnance and ordnance stores, ten thousand dollars.

For defraying the expenses that may accrue for the following purposes, viz:

For freight and transportation of materials and stores of every description; for wharfage and dockage, storage and rent, travelling expenses of officers, and fuel and candles, to officers other than those attached to navy yards and stations, and for officers in sick quarters where there is no hospital, and for funeral expenses; for commissions, clerk hire and office rent, stationary and fuel, to navy agents; for premiums and incidental expenses of recruiting; for apprehending deserters; for compensation to judge advocates; for per diem allowances to persons attending courts martial and courts of inquiry, and to officers engaged in extra service beyond the limits of their stations; for printing and stationary of every description, and for books, maps, charts and mathematical and nautical instruments, chronometers, models and drawings; for purchase and repair of fire and steam engines, and for machinery; for purchase and maintenance of oxen and horses, and for carts, timber wheels, and workmen's tools of every description; for postage of letters on public service; for pilotage and towing ships of war, for cabin furniture of vessels in commission, and for furniture of officers' houses at navy yards; for taxes on navy yards and public property; for assistance rendered to vessels in distress; for incidental labor at navy yards, not applicable to any other appropriation; for coal and other fuel for forges, foundries, and steam engines; for candles, oil, and fuel, for vessels in commission and in ordinary; for repairs of magazines and powder houses; for preparing moulds for ships to be built, and for no other purpose whatsoever, two hundred and ninety five thousand dollars.

For contingent expenses for objects not hereinbefore enumerated, four thousand dollars.

For pay of the officers, non commissioned officers, musicians and privates, and for subsistence of the officers of the marine corps, including arrearages and increased pay under the act, second of March one thousand eight hundred and thirty-three, one hundred and thirty-five thousand eight hundred and eighty dollars, and twenty-five cents.

For subsistence of non commissioned officers, musicians and privates, and washerwomen of said corps, serving on shore, nineteen thousand two hundred and thirty-one dollars and eighty cents.

For clothing, twenty-nine thousand three hundred and fifteen dollars.

For fuel, nine thousand and ninety-eight dollars.

For contingent expenses, including arrearages, nineteen thousand dollars.

For transportation and recruiting, five thousand dollars.

For medicines, hospital stores, and surgical instruments, for officers and men serving on shore, two thousand three hundred and sixty-nine dollars and seventy-one cents.

For balance due Lieutenant Colonel Anderson, nine hundred and fifty-four dollars and twenty-two cents.

For the erection of barracks for the marines stationed at the Navy Yard, Brooklyn, New York, thirty thousand dollars.

For carrying into effect the acts for the suppression of the slave trade, including the support in the United States, and for a term not exceeding six months after their arrival in Africa, of all persons removed from the United States under the said acts, five thousand dollars.

That so much of the sums appropriated by the act of the twenty-eighth May, eighteen hundred and thirty, for the relief of Alexander Claxton, as still remains due and unpaid, and which has been carried to the credit of the surplus fund, shall be, and the same is hereby, reappropriated.

DESTRUCTIVE FIRE AT HERKIMER.—The Herkimer county Court House and Jail, together with the Rev. Mr. Spinners' Church, in the village of Herkimer, were entirely consumed by fire on Sunday night. The fire took place in the prisoners' room by accident, but was not discovered in season to arrest its progress.—[Albany Daily Advertiser.]

DESTRUCTIVE FRESHET.
Extract of a letter from a gentleman residing in Charleston, Kanawha county, to his friend in this city, dated January 15th, 1834.

"I wrote the above several days ago—but owing to an unusual freshet in the Kanawha River, the mail did not leave our office. On Saturday, the 11th instant, it commenced raining, which continued until Sunday night, and our whole country was inundated with water. The Kanawha was within four feet of the rise of 1822, which was the greatest freshet ever known in the river. Many of the bridges are swept away, and all have sustained damages. I understand that the water was four feet deep on the floor of the Coal River Bridge, but it is said did not move it. The new bridge at Campbell's Creek was taken up the creek (by back water.) I have understood that they have been attempting to tow it back, and let it settle down, as the water falls, in its original place, and that they have hopes of succeeding. The embankment has also been injured. You will know where the water was in Charleston, when I tell you it was 18 inches deep on the floor of the dining room of Captain Wilson's tavern.

"Two negroes went into Mr. L. Ruffner's coal bank. The entry is somewhat lower than the interior, where they worked. The water rose over the mouth of the bank, before they were aware of its approach. They attempted to escape, but found that the long entry, of more than one hundred yards, was closed, and the water still advancing on them: They returned to their room, and got on a pile of slate in the highest part thereof, and in more than mid-night darkness, awaited the sure approach of death. In this situation they remained *two days and nights*. As soon as the water fell enough to let a *crust* enter the bank, one was sent in, but it could not pass the lowest point. The steersman called to them; they answered, and were requested to be patient—"the river was falling." What pen could describe the feelings of these poor fellows, when they first heard the sound of human voices! It is supposed, that the air, which was confined in the room by the mouth's closing first, prevented the water from filling it. But it is not certain that is the fact; or that the room, in which they were, was not above the water level.

"A considerable quantity of salt has been lost. Mr. B. sat and watched the approach of the water to within three or four inches of his salt-house, in which he had 30,000 bushels, that he could not remove. But the Dove returned with the Olive Branch. The waters began to recede."—[Rich. Enq.]

La Normandie is the name of a new packet ship of the Havre line, which is now preparing to sail on Saturday next, 1st proximo. This vessel was built during the past summer, at Hartford, in Connecticut, under the superintendence of Mr. Isaac Bell. She is between 5 and 600 tons, of fine model for both speed and burden, and of great strength. Her main cabin is on deck, and it is finished with remarkably good taste. The whole is painted white, very highly varnished, with a light gilt moulding around the panneling. The state rooms are large and commodiously arranged; and from the after part of the cabin designed for ladies, a private stairway descends into another smaller cabin between decks, admirably adapted to one or two families that might desire to be together on the voyage. One of the most striking novelties in this ship is the arrangement for the helmsman. The wheels are sunk in the quarter deck, constituting the roof of the main cabin, so that by throwing up a leathern covering, in the shape of a gig top, the man at the wheel is completely protected from the weather. His position too is behind, instead of beside, his wheel, as is generally the case, and hence he has more control over it. Upon the whole, it is difficult to conceive of more, or more ingenious arrangements for comfort—if such a term can be predicated of anything belonging to the sea—and safety, than is to be found in *la Normandie*—and so God speed her!

Great Sale.—The Company owning the "Old Line" of Liverpool packets, have sold six of the ships to a new Company, the Agent for whom are Messrs. Goodhue & Co. The ships sold are the Britannia, Caledonia, North America, South America, Europe, and Hibernia. The price is \$36,000 each. They are comparatively new. The Pacific and New York, the oldest of the fleet, are not included in the sale. The Agents on the other side are Baring, Brothers & Co. That great house, we understand, are making arrangements to extend their business in this country, where they say—they have made more money and lost less in comparison with the whole amount, than in any other country.—[Jour. of Com.]

The old line of Liverpool packets, we are desired to say, will be completed by the addition of the Orpheus and the new ship Columbus, now building, by Messrs. Webb & Allen, under the direction of Captain Cobb. These ships will take the place of the Pacific and New York.

The arrangement of the Line, which will take effect on the 1st of March, will be announced by the middle of next month.

The annual report of the Inspector of Pot and Pearl Ashes for the city and county of New York, was made to the Senate on Friday. Whole number of pounds inspected, including scrapings, 18,692,945; estimated value, \$823,383 31; inspector's fees, deducting expenses, \$4,304 85. The inspector adds that he does not know of any legislative provisions that would have a tendency to improve the quality or increase the quantity.—[Alb. Argus.]

APPOINTMENTS—Saturday, Jan. 18.
New York—Isaac Sayrs, measurer of grain, in place of Aaron Howell, resigned; D. C. Colden, notary public, in place of Thomas Shankland, resigned; Jesup Jermon, notary public, in place of Evert A. Banker, resigned; Theodore Allen, commissioner of deeds, in place of John L. Creger, deceased; Thomas Frost, measurer of grain, in place of Wm. Frost, resigned; Henry H. Orrington, public notary, in place of Wm. Orrington, resigned; Edward M. Luther, culler of staves and heading, in place of James Ravene, removed; Daniel Deitrick, inspector of sole leather, in place of Henry Leek, resigned; Edward Hueston, for pilot by way of Hell Gate, in place of Samuel Leacycraft, removed; John H. Bell, notary public, in place of Thomas M'Cready, jr. deceased; Richard W. Blatchford, a commissioner of deeds, in place of Mitchell Sanford, resigned; Jas. Rogers, measurer of grain, in place of Samuel Bleecker, removed.—[Albany Argus.]

[From the Baltimore American of Saturday.]
DESTRUCTION OF THE WARREN FACTORY.—A little before 12 o'clock on Thursday night the extensive Cotton Mill belonging to the Warren Manufacturing Company, about 15 miles from the city, was discovered to be on fire. The flames first appeared in the highest story of the building, near the belfry, about twenty minutes after the watchman had taken his regular half-hourly round through the rooms. He immediately attempted to give the alarm to the workmen by ringing the bell, but the second pull of the rope caused it to sever at the place where the fire had already reached it. This circumstance created some little delay in rousing the workmen, but they were nevertheless at the premises in a comparatively short time, and using every possible exertion to check the fire, but without, we regret to add, being able to accomplish it. In a short time the whole building, with all its valuable machinery, was reduced to a heap of ruins. None of the adjoining buildings were injured.

The cause of the fire cannot be traced. It broke out in a garret room containing nothing combustible, and but little used, and the watch-clock indicated the regular half-hourly presence of the watchman until the alarm was given. The fire was discovered at an early stage, but the combustible nature of the building, rendered still more so by the quantity of oil used on the machinery, baffled all efforts to subdue it. By far the most distressing circumstance connected with the event, is the fact that between seven and eight hundred persons derived, directly or indirectly, their support from this establishment, and are thus suddenly deprived of employment at this very inclement season.

We understand that the building and machinery were insured to the amount of sixty-three thousand dollars in several offices in the Eastern States. The property destroyed, however, could not be replaced for \$100,000.

LITERARY NOTICES.

No. XII.

MONROE Co. (M. T.) DEC. 5, 1833.

I write to you from a log cabin on the banks of the river Raisin, about 30 miles above Monroe. The worthy farmer, upon whose premises I am quartered for the night, sits with his child on his knee, in the chimney corner, with a prosing visitor, pipe in mouth, opposite, while the good woman is engaged doing some "chores" at the further end of the apartment, which is of course the chief cooking, eating, sitting, sleeping and smoking chamber in the house. My dormitory, I have a shrewd suspicion, is to be in a loft, from which a lad is at this moment descending by a ladder with some corn for my horse. The black walnut stand, upon which I am writing, occupies the centre of the room; and as I am at this moment keeping up my share in a desultory sort of conversation going forward around me, and at the same time trying to check the undue familiarity of a large bull-dog—who, like other individuals, has become troublesome from being admitted too rapidly into my intimacy—you must not expect me to be very coherent in detailing the impressions of the day.

It was a gloomy, lowering morning, with occasional flakes of snow driving through the harsh atmosphere, when I started from the village of Monroe, well mounted on a stout roan, whose figure and action would command thrice the sum in New York that the animal cost me here, and whose performance to-day speaks well of the dependence I may place upon him to carry me through my arduous route into the interior of the Peninsula. It was with a feeling of almost boyish pleasure that, after the slight taste I have had of stage travelling from Pittsburgh to Cleveland, and from Detroit to Monroe, I found myself once more in the saddle, with the full privilege of regulating my motions as I choose. The delightful mode in which I travelled with S—from New York to Wheeling, in a barouche, with two led horses under the saddle, was indeed, both for pleasure and solid comfort, not to be surpassed. But now, though I have neither the agreeable friend, the attentive groom, nor the luxurious carriage, to enhance the gratification and relieve the weariness of travelling, the feeling of independence still remains. And though I confess I could not suppress a sigh this morning, when packing up the linen and books which, with my trunk, I shall not see for a month to come, yet that pair of saddlebags beneath my feet, though conscious only of a shirt apiece, flanked as they are by my light fowling-piece, which that weather-beaten worthy is at this moment curiously examining, and my leggings, which are drying upon those andirons, make me feel as rich as did that famous soldado Dugald Dalgetty himself, with his single change of chamois leather and iron overcoat, while handling his arms and surveying his compact appointments from the back of the doughty Gustavus.

My road led, from the moment of leaving the village, along the banks of the Raisin, whose serpentine current flowed fuller and clearer the further I advanced into the country. The land at the same time gradually rising, and though never hilly, yet leaving the stream, far enough below to form a bluff of some 10 or 15 feet, where the timber land rose from the rich bottoms on its margin. After riding thus for about 20 miles along the river, where the log cabins gradually became fewer and farther between, I struck through a wood so dense that it seemed to terminate the settlements in this direction, and then at a sudden turning of the path, I came at once upon the "oak openings." It would be difficult to convey an idea of the pleasing effect of such a surprise. Imagine yourself emerging from a New Jersey swamp, and coming at once bound upon one of the English Parks which Puckler Muskaw so admirably describes. Clumps of the noblest oaks with not a twig of underwood, extending over

a gently undulating grassy surface, as far as the eye can reach; here clustered together in a grove of tall stems supporting one broad canopy of interlacing branches, and there rearing their gigantic trunks in solitary grandeur from the plain. The feeling of solitude I had while in the deep woods, deserted me the moment I came upon this beautiful scene, and I rode on for hours, unable without an effort to divest myself of the idea that I was in a cultivated country. Towards evening I found myself in the thick forest again, and was glad as the night closed in darkly over a road where at every step my horse would either sink to his knees in mud, or trip over the stubs of the newly cut saplings, to be overtaken by a mail-rider, with his leathern charge, on horseback. The lonely lad was as glad of company through the forest as I was of a guide; and he willingly taking the lead, I flung my bridle on my horse's neck, as the skies became blacker and blacker, and touching him smartly with the spur, away we went through the woods together. "Take care of that tree, sir; look out for the mud-hole!"—called my goblin usher at each moment, as we tramped and splashed along, where I would have defied the Evil One himself to have seen any thing but the impenetrable dark. I heeded him not; but bending low in the saddle to avoid the boughs, and glueing my knees to the surcingle, I surrendered myself to my destiny, and attended to nothing but keeping my horse as close to the heels of his file-leader as possible. At length we reached a clearing, and a few yards of better road brought us to a log-cabin. The family were at supper when I entered; and sitting down with the rest, I helped myself with an iron spoon from a dish of suppawn, and fishing up a cup from the bottom of a huge pan of milk, I poured the snowy liquid over the boiled meal that rivalled it in whiteness. The corn from which it is made, my host tells me, grew to the height of 16 feet, the stalks being of a blackish green color. From the same soil, a black sandy loam of easy tillage, wheat as high as a man's head has been raised; the produce from a single grain being from 300 to 400, and in one instance one thousand and twenty-six. I see symptoms of sleeping in those around me; and having no right to monopolize this important apartment, will conclude this elsewhere to-morrow.

TECUMSEH, LENAWEE Co., DEC. —

The cockloft, as I expected, was my place of rest. I stumbled over a pile of corn, and struck my head against the roof, almost as soon as I had got my body fairly above the trap-door. I found a clean bed, however, and it was a very sociable place, after all; for there were four persons besides myself stowed away in the different corners. So soundly did I sleep on my straw pallet, that the night seemed to me but just begun, when the red glare of a tallow candle flashing over my eyes, with the tap of the mail rider on my shoulder, told me that dawn was breaking, and that we must be gone. The landlord brought out a lantern for me to mount by, and we had proceeded far on our journey before the faintest streak in the East indicated the waking of the sun.

It was about 7 o'clock, when stopping to water at a little shantee, I found several laboring people at breakfast within; and the mail carrier consenting to wait for me, I sat down to table at once with the rest. The fare consisted of hot rolls and tea, with large pieces of pork swimming in its own gravy, with a plate of noble potatoes, that pulverized when you touched them. My plate was heaped at once with all, while each one present vied with the other in civility to me. They were talking of a horse, for which \$100 had been paid, when I entered; and an English poaching gun I have with me, not worth a fifth of the sum, caught the fancy of the owner. He insisted upon "swapping with me on equal terms," and seemed much hurt when I refused not only to "trade," but expressed no inclination to see

his favorite steed. I replied, however, so good-humoredly to his entreaties to trade, that he still persisted in them until taken aside by one or two of those present. He then came up to me in an altered manner—"I hope, sir, that I don't insult you by wanting to buy that curious gun, for I don't mean to be uncivil not at all in the least." Upon assuring him that I had taken no offence, he rejoined that if his horse was not worth \$300 he would eat him, but he had set his heart upon that gun and must have it. I did not like to expose myself to the temptation of seeing the horse though of course I did not think for a moment of taking advantage of the honest yeomans caprice, but had it not been a present from a friend abroad I should certainly have given my ardent acquaintance the toy which caught his fancy after what followed. "I say mister, said he musing for a moment "do you want a farm, eh! a house, eh! I'll trade you as good a tavern stand two miles from this as there is in this county." I got away at last as he followed me to the door and held my reins to mount, by promising to leave him the object of his desires in my will.

The character of the country continued for some miles much the same as that passed over yesterday, though the river gradually degenerated into a narrow muddy stream. The log cabins which always occurred in the heavily timbered district, had nothing to distinguish them from each other, and the openings were as silent as if man and beast had deserted them; though I saw a couple of deer in one instance feeding afar off and met a settler who was carrying a wolf, just caught in a trap by the road side, on his shoulders. I was struck too at seeing no less than three pet fawns near different houses, within a few miles of each other. In one instance a tall hound was sitting erect beside one of these gentle creatures, who was licking the ears of the enemy of his race. The incident reminded me of an anecdote I heard told by an old hunter in one of the wild districts of New York. His favorite hound one morning, when the deer were in the red coat and not fit to hunt, came to him while chopping, and made signs for his master to follow to a thicket not far off, where the woodman discovered a fawn so entangled that it could not escape. It was so small and feeble that he carried it away with ease in his arms, while the doe, which was near at hand, followed her bleating offspring. The dog accompanied him with great apparent joy, and, though one of the keenest of his kind, would drive off the grown deer only a few rods and then return at once to keep an eye on his master's movements. The fawn was taken home, and, being fed continually by the children, soon went tame about the house. The dog, however, insisted upon sleeping with it, and could scarcely be separated from his long eared friend, and when it met with the usual fate of pets and died prematurely, a month or two after, poor Ring was inconsolable. The worthy English settler, who had been a game-keeper in the "wild country," in his day, added, that he had the curiosity to dress a piece of the venison, which, fond as hounds are of that food, was rejected with disgust by the canine mourner.

One of the other fawns which I saw, would, with the group attendant, have made a pretty subject for Fisher's pencil. He had thrust his head into a bevy of rosy little girls, who were making "sand pies" on the bank of the river, and as his delicate hoofs threatened to demolish the rural substitutes for the card houses of parlor bred urchins, one of the little architects, covering her work with her hands, kept the intrusive animal at bay with her head; the long yellow locks of which streamed over his bluish crest while the perverse beast twisted his snout under and insisted upon licking her face.

It was still early in the afternoon when I arrived at this place, and my surprise was not slight after coming through a region where every mile seemed to lead me further from ci-

vivilization to light suddenly upon a pretty village laid out with broad streets, and having an excellent tavern on a public square in the centre. I entered the town through an oak opening. When a few hundred yards from the village, I passed a half dozen graves, apparently dug at random among the trees, though each was ornamented with a handsome head stone. I have since learnt that the towns people, with a degree of consideration which might well be emulated in larger cities, are already making arrangements to lay out and plant a public cemetery for the use of every religious denomination in the place. At Monroe I believe they have already done the same thing. There, indeed they had an ample number of guests for the narrow house, before even the abodes for the living were built. The bones of the butchered Kentuckians bleached till within a few years on the banks of the Raisin, and a gentleman of the place told me that he had often walked over the execution ground and handled skulls that were cloven with the tomahawk. There is also an Indian cemetery about 12 miles from Monroe, where the skeletons of the dead can be plainly seen through the crevices of the stone pile heaped above them. I am told that they are wholly unmolested by the white inhabitants; partly from feelings of decency, creditable to themselves, and partly, perhaps, from fear of the roving relatives of the deceased, who return yearly and observe the condition of the spot, with a jealous eye. Not far from this place, resides an old settler, who has killed a half a dozen Indians with his own hand. Three or four of them he shot with his rifle from his cabin, when they surrounded it to capture him; and the stories told of his encounters with the others, might better be detailed by a novelist than a letter writer. I have seen nothing of the natives yet, except a couple of Wyandott squaws, though the French settlers with their elf locks and blanket capotes, might at a distance be well taken for aborigines. I think a little of starting at once for the rapids of the Grand River, and spending a week or two among the Ottawas, who, I am told are still there in considerable numbers, and preserving enough of their original habits to make them fair specimens of the Michigan Indians. They tell me however that a guide will be indispensable, and having already offered one in vain a fair compensation, I may be compelled to give up the attempt.

The Grand river or Washtenoug is, as I have before mentioned, the largest stream in the Peninsula, being 270 miles in length, while the country watered by it consists of about 7,000 square miles. It has a good harbor at its mouth, on Lake Michigan, for vessels drawing 8 feet water, and it is navigable for those drawing 4 feet for more than 30 miles from the Lake: while further inland it traverses a country represented, by my informant who has recently returned from surveying in that distant region, as of immense fertility. There are also beds of gypsum and lime, with sound stone quarries and mines of iron and with indications of the existence of copper, to be found on its tributaries, while a hundred mineral springs—which seem to abound in this country, for I have already seen a half a dozen—enrich the central region where its branches interlock with the bright waters of the Huron on the eastern, and the myriad of streams and lakes which form the sources of the Kocklamazoo on the western, side of the Peninsula. They tell me here that it would be in vain for me to attempt to cross the country from Chicago to St. Louis alone at this season of the year, when, if the vast prairies are covered with snow, I should be lost beyond a certainty, and as I am now compelled to remain until the new mail contracted for commences running on the first of January, I shall employ the intermediate time in seeing as much of Michigan as possible. I find myself among the most intelligent population of the middle class (the bone and sinew of a community) I ever mixed with, and every one seems so contented, I may even say delighted, with his adopted home, that I am catching a little of the spirit of those around me, and am eager to visit more intimately scenes which one would suppose were Elysian, by the way in which people talk of them. I find myself as yet only 35 miles from Monroe by the new U. S. road, though the route I travelled was 65.—When you next hear from me I shall be father in the

interior, and hope to be able to tell you that I have seen a hill or a rock, the sight of either of which would, I confess, be refreshing in spite of all the charms of oak openings, vine hung streams, and grassy bottoms. H.

PETER PARLEY'S BOOK OF POETRY.

PETER PARLEY'S BOOK OF BIBLE STORIES. Boston: LILLY, WAIT & Co. Agent in New York, J. W. LILLY.—These are two little volumes, in the usual style of Peter Parley, adapted for children and youth, and adorned with wood-cuts. The Book of Poetry is composed chiefly of short and well selected pieces. The Bible Stories, is made up of two little English books, "Bible Letters" and "Gospel Stories," with some few alterations and omissions.

DENTOLOGIA, A POEM; by SOLYMAN BROWN, A. M. with Notes Practical, Illustrative, Historical, &c. By ELEAZAR PARMEY, Dentist. New York: PEABODY & Co.—A poem "on the diseases of the teeth, and their proper remedies!" Was ever Muse invoked in such behalf before? This may well seem a very natural exclamation, and yet, when one goes beyond the first blush of the subject, it will be found that inspiration is sought, and found, too, by the poet, in lovely woman's face, of which two rows of pearl form not the least lovely feature. In serious truth, Mr. Brown has here treated a subject, unpropitious certainly, with no common talent, while, in the notes of the friend to whom he dedicates his poem, there is much that may be read with both profit and pleasure, by the admirers of, and those admired among, the fair sex.

LIFE AND WRITINGS OF MAJOR JACK DOWNING, &c. written by himself: 2d edition, 1 vol. Boston, Lilly Wait, Colman & Holden.—This volume contains capital humor and satire; though much of it, from its local application, referring to quarrels in the Maine Legislature, will be less relished here than in New England. There are appended to it—and that, considering they are denounced as spurious, seems unfair—several letters of our Major Jack Downing. The whole of these—which, bearing on general affairs as they do, and revealing with such intimate knowledge, the doings of both cabinets at Washington, and of the interior of the General's palace, are universally acceptable—will, we are glad to hear, soon be published here.

MECHANICS' MAGAZINE, for January.—Among the diversified and truly interesting contents of this number, we remark a drawing and description of Dr. Church's Steam Carriage for ordinary roads, now in practical operation in England; and a clever paper on Mr. Burdon's steamboat. Mr. Verplanck's address, too, before the Mechanics' Institute, is given at length, and will, we hope, be generally read and meditated.

Accompanying this No. we have received a large and handsome 8vo. volume, comprising all the numbers of the past year. It is a volume which working men in all departments, and men having any turn for mechanical or scientific enquiries, should possess.

HEATH'S BOOK OF BEAUTY FOR 1834.—We have just seen this beautiful volume, which W. A. Colman has received by the George Washington. It is in all respects of engraving and printing, worthy of its name. He has also vol. 1. of "A Miscellany of Natural History," containing the history of Parrots, and giving all their varieties in colored engravings; a well executed work.

FOR SALE,

ATLANTIC JOURNAL AND FRIEND OF KNOWLEDGE—A Quarterly Journal, by Professor Rafinesque, of Philadelphia, begun in the spring of 1832, with wood cuts, &c. dedicated to Historical and Natural Sciences, Botany, Agriculture, &c. at one dollar per annum.

MEDICAL FLORA OF THE UNITED STATES, in 2 vols. with 100 plates, containing also the economical properties of 300 genera of American plants. \$3.

MANUAL OF AMERICAN VINES, and Art of Making Wine, with 42 figures. 25 cents.

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AMERICAN FLORIST, with 36 figures—price 25 cts.

Orders for these works, or any other of Professor Rafinesque's, received at this office.

As of J M & F

NOVELTY WORKS,

Near Dry Dock, New-York.

THOMAS B. STILLMAN, Manufacturer of Steam Engines, Boilers, Railroad and Mill Work, Lathes, Presses, and other Machinery. Also, Dr. Nott's Patent Tubular Boilers, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited.

TOWNSEND & DUFFEE, of Palmyra, Manufacturers of Railroad Rope, having removed their establishment to Hudson, under the name of Duffee, May & Co. offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J. B. Jarvis, Eng. M. & H. R. Co., Albany; or James Archibald, Engineer Hudson and Delaware Canal and Railroad Company, Carbondale, Luzerne county, Pennsylvania. Hudson, Columbia county, New-York, January 22, 1833.

LOCOMOTIVE ENGINES.

THE AMERICAN STEAM CARRIAGE COMPANY, OF PHILADELPHIA, respectfully inform the public, and especially Railroad and Transportation Companies, that they have become sole proprietors of certain improvements in the construction of Locomotive Engines, and other railway carriages, secured to Col. Stephen H. Long, of the United States Engineers, by letters patent from the United States, and that they are prepared to execute any orders for the construction of Locomotive Engines, Tenders, &c. with which they may be favored, and pledge themselves to a punctual compliance with any engagements they may make in reference to this line of business.

They have already in their possession the requisite apparatus for the construction of three classes of engines, viz. engines weighing four, five, and six tons.

The engines made by them will be warranted to travel at the following rates of speed, viz. a six ton engine at a speed of 15 miles per hour; a five ton engine at a speed of 18 miles per hour; a four ton engine at a speed of 22 1/2 miles per hour. Their performance in other respects will be warranted to equal that of the best English engines of the same class, with respect not only to their efficiency in the conveyance of burthens, but to their durability, and the cheapness and facility of their repairs.

The engines will be adapted to the use of anthracite coal, pine wood, coke, or any other fuel hitherto used in locomotive engines.

The terms shall be quite as favorable, and even more moderate, than those on which engines of the same class can be procured from abroad.

All orders for engines, &c. and other communications in reference to the subject, will be addressed to the subscribers, in the city of Philadelphia, and shall receive prompt attention.

By order of the Company,

WILLIAM NORRIS, Secretary.

December 2d, 1833.

For further information on this subject see No. 40, page 773 of this Journal.

ENGINEERING AND SURVEYING INSTRUMENTS.

The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely new: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy—also, a Railroad Goniometer, with two Telescopes—and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.

WM. J. YOUNG, Mathematical Instrument Maker, No. 9 Dock street, Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.

Baltimore, 1833.

In reply to thy Inquiries respecting the Instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad. I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable.

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This Instrument, more recently improved with a reversing telescope, in place of the vane sight, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to lateral angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,

JAMES F. STABLER, Superintendent of Construction of Baltimore and Ohio Railroad.

Philadelphia, February, 1833. Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors.

A. H. GILL, Civil Engineer,

Germantown, February, 1833.

For a year past I have used instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

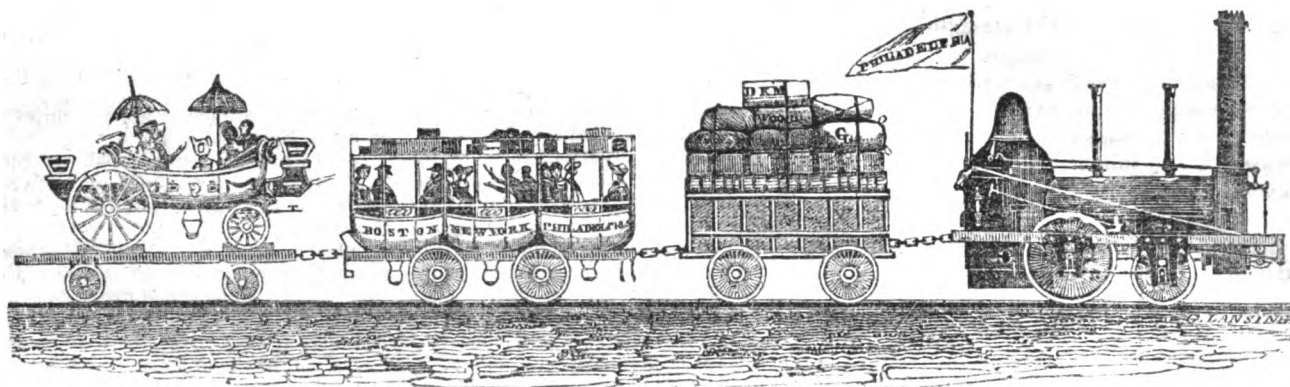
HENRY A. CAMPBELL, Eng. Philad., Germantown, and Norristown Railroad.

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A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them upon application, to any persons desirous of pursuing the same.



AMERICAN RAILROAD JOURNAL, AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT No. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, EDITOR.]

SATURDAY, FEBRUARY 8, 1834.

[VOLUME III.—No. 5.]

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, FEBRUARY 8, 1834.

NEW-YORK AND ERIE RAILROAD.—This important public improvement seems to attract less attention at this moment of pressure and despondency, than it merits. The great question now seems to be how to pay old, rather than to contract new, liabilities; and so it should be: yet such a measure as that of opening a more direct, easy, and expeditious communication between this city and the great west, should not, for a moment, be lost sight of. Every preliminary measure for immediate action, when the sun of prosperity shall again arise, should be adopted, and every man who has an interest in the prosperity of either the country at large, that through which the road is to pass, or of this city, should be ready to aid in its accomplishment. We have often referred to this contemplated railroad, as a measure in which the state, as a state, ought to take an interest. It would be to the southern what the canals are to the northern part of the state; and by whom were those constructed? Were they not built by the state? If they were, why should the state hesitate to confer equal benefits on other parts of the state, where the public at large would be equally benefited? The people of the southern part of the state are equally entitled with those of the northern part, to public improvements, if those improvements will contribute equally to the general prosperity of the country; and therefore the legislature cannot, in justice, withhold the aid of the state from this important improvement.

[COMMUNICATED]

New-York, 1st Feb., 1834.

Hon. STEPHEN ALLEN,
Chairman Water Com. :

SIR,—By a note recently received from Mr. Ogden, one of the assistants on the water survey, I regret to learn that the arrangement of his name, second in order, in the roll of the party annexed to my report, is considered by him as reflecting invidiously upon his professional standing and character; and as nothing was further from my purpose than to make any reflection of that kind, I cheerfully accord to his wishes in submitting the following explanations.

Mr. Ogden and Mr. Cartwright were the heads of two co-ordinate branches of the service; the former having charge of the leveling operations, and the latter that of the traverse work: but as both performed their duties in immediate relation to myself, as the head of the party, they acted without any particular relations of responsibility or subordination with respect to each other.

In drawing up the roll referred to, the name of Mr. Cartwright was placed first, in consideration of his age and general respectability of character, without intending to imply, by any means, that he was the *official superior* of Mr. Ogden. In fact, the duties of the latter, according to the routine of the service, necessarily preceded those of the former, and in point of professional responsibility, were second only to those of the principal engineer.

Presuming that these explanations will remove any unfavorable impressions of the kind alluded to, I remain, very respectfully, your obedient servant,

D. B. DOUGLASS,
Chief Engineer on the late Water Survey.

Economy in the Use of Steam. [Communicated for the American Railroad Journal, and Advocate of Internal Improvements.]

It has been for several years past, to the writer, an important object, and a favorite study, to effect, if possible, a saving in the use of steam; and after a great variety of experiments on the subject, he has arrived at the conclusion, and believes he can demonstrate clearly to every rational mind, by actual experiment, a saving of nearly one-half, by the use of double cylinder engines. In order to illustrate the fact, he has fitted up a small model, so arranged as to give every possible chance to test fairly the correctness of his theory. The machine above mentioned is constantly in operation at Wm. T. James' foundry and steam engine factory,

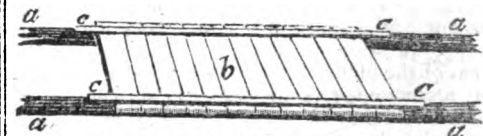
No. 40 Eldridge street, where those interested in such matters are respectfully invited to call and satisfy themselves.

The following is the plan of Mr. E. JOHNSON for constructing railroads, referred to in our last. It is a plan upon which we should like to have the opinion of experienced engineers.

Mr. Johnson will also oblige us by communicating the probable expense of such a railroad in ordinary situations.

A New Plan for the Construction of the Wood Work of Railroads. By ELISHA JOHNSON. To the Editor of the American Railroad Journal, and Advocate of Internal Improvements.

SIR,—Having introduced a new plan for the construction of the wood work of railroads, which is adopted by the directors of the Buffalo and Black Rock Railroad Company, I wish, through your valuable Journal, to give a brief description of the same, in answer to inquiries that have been made.



Place longitudinal sills, *a a*, of round timber one foot in diameter, hewed on one side, even with the surface of the grade; cover the road bed with plank, *b*, two and one-half inches in thickness, and seven feet long, resting upon the grade and sills; over the sills place two by four inch scantling, *c c*, on which are placed the iron plates: all of which parts are secured by eight-inch spikes, terminating in the sills.

The plan is proposed for new districts of country, where the location of the line of road is through low table lands, or the rich farming lands of secondary formation, which are retentive of moisture, or light sand soils; all of which would require expensive preparations of the grade by rubble or gravel blind drains, &c., to prepare for the reception of the timber work.

In the usual form of timber constructions, it has a superficial bearing of twenty-nine feet upon the grade, to the rod. In the above form, there is one hundred fifteen and one-half feet

of bearing per rod, increasing the strength of road in proportion to its bearing, on unprepared grades, and ample strength for locomotive power with heavy trains, on alluvial soils.

The expense of materials is about the same in either plan, where suitable timber for rails can be obtained in the vicinity of the line of road.

The improvement proposed consists in saving the expense of a prepared grade and horse path, varying in cost from one to two thousand dollars per mile; also, a saving of the item of suitable rails, when they have to be obtained at great expense of transportation, as well as the mechanical work connected with them.

The plan proposes other advantages, viz.: the admission of the use of such timber as is most convenient to obtain near the line of road; a material saving of expense in passing water-courses, bridges; and the construction of turnouts and crossings by a continuous floor, which forms a roof to the grade; when by use and the effect of rains, the joints of the timber are filled with earth, the water passing off through triangular apertures Δ , at the meeting at the ends of the supports to the iron; greater security from the effect of frost, by reason of the form of construction and a dry grade; the spike that secures the iron, secures the different parts of the timber work; a dry horse-path, which is proposed to be protected by the use of a thin coating of sand over the floor—this will protect the timber from the effects of the sun, and preserve a more uniform moisture, aiding the preservation of the timber.

In reference to objections that may be urged against proposed improvements, it is not practicable to answer them fully, except by the test of experiment. In the construction and use of such a form of road, it is suggested that it may be inconvenient to repair an imperfect embankment, which is remedied by the ease which the wood work may be taken up and put down again, or by having movable plank at every three or five feet, to be drawn out from between the spike or every other plank moveable, if screwed six inches in width.

The wear of the plank and the effect upon the horse at a speed of ten miles per hour, are proper questions of inquiry. In answer, the wear of the plank: by comparisons made without protection, as proposed, it is satisfactorily ascertained that the wear will be less than the decay for the amount of horse power required on railroads, if locomotive power is not used. The effect upon the horse is believed to be more favorable than upon a compact gravel road in dry weather or frozen earth, ice, or stony roads, if not relieved by the sand covering.

A question may arise, of comparative effect upon the decay of the timber. In the common form, parts of the work, such as the tenants of the cross timber or sleepers, are believed to be in the most exposed situation they can be placed; when in the proposed form, by a continuous bearing upon the grade, the timber can be used in an advanced state of decay.

The simple form of construction removes a prominent cause of expense in the details of the management of laborers and mechanics necessary in completing the several parts in the common form of construction: if connected with the contracts for grading, the sills are put into the grade as a part of the contract. Twelve days, with one superintendent, one mechanic, and six laborers, will complete a mile of road, with the materials delivered on the line, tested by experiments that have been

made; the time required is the time necessary to drive the spike.

In adopting the aforesaid principle of transferring the strength of rail to the sill, and obtaining strength of grade by increasing the superficial feet of bearing, will admit of many variations from the above described form, in the size, quality, and quantity of timber, in different descriptions of grade, and in the use of red cedar, with many other particulars not proposed to be entered upon in this communication.

The experiment that has been made in the completion of three-fourths of a mile on the Buffalo road, have been favorable in the results; and in the experiments of loaded cars on the track, a favorable effect was noticed by reason of the continued bearing and direct connection with the grade, particularly on a part of the grade that was loose clean sand, which, from its confined position, had the apparent effect of a stone foundation: the grade receiving all of the action of a moving heavy body.

If these remarks should contribute to useful inquiry, and an improvement made in the form of construction, adapted to the age and circumstances of our country, where capital bears a high rate of interest, and the present limited business of different sections not warranting expensive constructions, would be all that could be expected from these imperfect remarks.

ELISHA JOHNSON, Civil Engineer.

Rochester, Jan. 24, 1834.

Report of the Committee on the Affairs of the Saratoga and Schenectady Railroad. Presented 4th December, 1833.

[Continued from page 51.]

There being no farther occasion for an engineer of the Road, the services of the person heretofore filling that office have been dispensed with; a saving of the salary of \$1500 per annum is thereby effected. It is believed that, by establishing a carpenter's and blacksmith's shop at one of the stations of the line of road, and employing a skillful workman in each department, by the year, whose duty it shall be to attend to all the repairs of the Company's wagons, the laying of timbers on the Road, shoeing horses, &c., a great saving will result to the Company, and facilitate the operations of the Road. Heretofore the work has been done at different places, and the highest prices uniformly paid. The Committee are strongly impressed with the necessity of making such an arrangement, and thereby securing the advantages of having at all times the necessary hands to conduct the business of the Road.

The Committee, after having very carefully examined into the relative expense and advantages of steam and horse power, are fully convinced that the former is to be preferred, both as it regards economy and usefulness.

The engine now owned by the Company was constructed by Messrs. George Stephenson & Co., of Newcastle, England, and put in operation on the Road on the 2d July last. Its performance has given entire satisfaction. The Committee, viewing the importance of procuring another locomotive engine, and that any longer delay would be detrimental to the interests of the Company, have already ordered one from England, and availed themselves of the services of Mr. John Hampson, the Company's engineer of the locomotive, who embarked for Liverpool on the 1st instant, in order to examine the various improvements in this branch of business. He will suggest to the manufacturers some slight alterations from the one already in use; submitting it, however, to the better judgment of Messrs. S. & Co. to adopt such suggestion or not, as they may deem expedient.

The expediency of laying down turn-outs, each about 100 feet in length, was a subject to which the attention of the Committee was directed. From estimates made, it appears that a turn-out of 150 feet will cost about \$80, as the materials are already at hand. After a careful survey of the whole line of Road, the

Committee have come to the conclusion that it will be expedient, in addition to those already laid, to establish them at the following points, viz.

1st. At a distance of about 3 miles south of Saratoga Springs.

2d. Two miles south of Ballston Spa.

3d. At some convenient point between Schenectady and what is termed the "Half-way House."

Independent of the convenience those would afford to cars coming in opposite directions, they would also be found useful as stations for loading and unloading freight cars, either with materials for the use of the Road, or merchandise, wool, &c. to and from the adjacent neighborhood.

Although it is believed that the Company are furnished with sufficient horse and steam power to extend their freight business to the amount of exports and imports already mentioned in another part of the Report, yet as the present number of wagons can only conveniently transport from 10 to 12,000 tons, they would suggest the expediency of adding 12 more; making, in the aggregate, 30 wagons. As respects the passenger cars, it is believed that the present number will be sufficient, making due allowance for the anticipated increase of travel the next season.

The business of the Road has yielded, from the opening up to this date, as will be seen in the Appendix, the gross amount of \$42,666 79. The expenses in conducting its operations during the same period, have amounted to \$16,990 92; leaving a net profit of \$25,675 89: to which is to be added the sum of \$811 50 premium on the sale of stock made last April, making the sum of \$26,487 37. From this amount, the sum of \$14,250 was paid last September, being 5 per cent. on the capital, to stockholders, for the first regular dividend declared in August, leaving at this time a clear profit of \$12,237 37; to which may be added \$2,200, a moderate estimate for net proceeds for December and January: there will then be applicable for the next semi-annual dividend in February, the sum of \$14,437 37.

The Committee, taking into view the increase of business, and the ample means of the Company to carry into effect the arrangements recently completed for next season, and also the improvements in various branches of the administration of its affairs, together with the impulse given to the village of Saratoga, evinced by the erection of buildings for the farther accommodation of visitors, are of opinion that the gross income to be derived from passengers may be estimated, for the ensuing year, at \$50,000, and the freight at \$15,000; from which deduct, for ordinary expenses, \$6,000, and \$3,000 for repairs, together 19,000, will leave the net-proceeds of \$46,000.

In making this calculation, it is confidently believed the resources of the Company are not exaggerated; and a general calamity only, by which all public incorporations of this nature must suffer, can curtail the receipts. It may be farther remarked, that the past season was unpropitious, on account of the coolness of the summer; and the great number of visitors to the Springs is to be attributed mainly to the safety, facility, and expedition, afforded by the railroads.

It appears that the number of passengers that have travelled over the Road, since the opening of the same to the 30th November, 1833, amount to 53,018; but the Committee have not been able to ascertain the proportion that have passed to and from the several points on the Road, nor have they been able to distinguish the number that have gone for the purpose of visiting the Springs from the business travel.

As the Committee have adopted a system of collection, with regular checks from one point to another, they will be able hereafter to satisfy stockholders in this particular. They are, however, fully convinced, that the receipts for the business travel, with the receipts from

freight, will secure to stockholders, without calculating on the summer travel to the Springs, a fair income for their investment. Although public notices of the permanent operations of the Road were only given in the North and West late in October last, the increase of business travel has been great. By the comparative view taken in the Appendix F, the business carried on in October and November last year and this present year, in which months there is no pleasure travelling, it will be seen by the returns of October, last year, that \$839 96 were received; in the month of November, \$483 44 were received: and that in October of the present year \$1,574 89 were received; and in November, \$1,704 25. The present month of December promises yet better results. The Committee, therefore, in advancing their opinions of the future prospects of the Company, have founded their calculations upon positive data. This improved state of things may be ascribed, in a great degree, to the recent arrangements, and the regular system introduced for conducting the operations of the road, and proper publicity having been given to such arrangements.

The Committee, after examining the several statements exhibited by agents, for construction of the Road, have found that, according thereto, it appears that \$297,237 have been expended; and that a farther expenditure is required of \$11,820, making a total of \$309,057; from which is to be deducted \$6,541 27, for property the Company have on hand, at present useless, and which has been already paid for; leaving the sum of \$17,515 73 more than the present capital.

No part of this amount, which, in the opinion of your Committee, is required to place the Company in the attitude of carrying the general operations of the Road on the most extensive scale, and in the most successful manner, will be wanted until the ensuing spring and summer. To provide for this sum, whenever it becomes necessary, the Committee suggest two modes: one, the increase of capital to the extent already authorized and provided for by the charter: in this case, the Committee recommend to distribute the same among the stockholders, in the ratio of the stock they represent. The other mode is, to resort to a temporary loan. The latter mode, with deference to the opinion of the Board, is recommended by your Committee; as a loan for this small sum could be easily obtained on the most favorable terms, payable by instalments out of the abundant means of the Company.

In conclusion, the Committee would briefly remark, that during the progress of their investigation, they have acted under a sense of the importance of the duties devolved upon them. If they have succeeded in placing the affairs of the Company in their true light, and contributed in any degree to secure the interests of stockholders, they will feel a rich and ample reward.

JOHN B. LASALA, } of New York.
HENRY H. LAWRENCE, }
JOHN TOWNSEND, of Albany.

New-York, December 4th, 1823.

Total amount of moneys expended in the construction of the road, purchase of lands, locomotive engine, cars, waggons, horses, and all the various items of property belonging to the Company, appears by the abstracts furnished to the Committee to be . . . \$297,237 00

The amount of unsettled claims against the Company, (which are yet to be substantiated before they are paid,) is estimated not to exceed . . . \$2,000 00

Cost of an additional locomotive engine, . . . 5,500 00

Twelve additional waggons, to extend the transportation of merchandize, produce, &c. . . 3,000 00

Four turn-outs to be constructed on several points of the road, the materials being on hand, will not cost above \$80 each . . . 320 00

Two shops for blacksmith's and carpenter's work . . . 1,000 00

Capital . . . 309,057 00
285,000 00
24,057 00

The Company have the following property to dispose of, which is now useless, viz. mansion house and lot at Ballston Spa, taken to avoid paying heavy damages, which cost the Company \$3400 . . . 2,700 00

5,000 stone blocks, and 1,000 cubic yards rubble stone; estimated . . . 2,250 00

House and Furniture at the junction of Mohawk Railroad, which cost the Company \$1,250 . . . 750 00

Drawback to be received from U. States for Railroad iron . . . 344 88

Due to the Company for iron plates and Railroad iron . . . 246 39

A quantity of pine wood . . . 250 00

Amount that will be required above the present capital of \$285,000 to place the establishment on the footing recommended by the Committee, . . . \$17,515 73

ESTIMATE FOR KEEPING THE ROAD IN ORDER, PER ANNUM.

Six steady laborers, at \$25 per month, . . . \$1,800 00
Barrows, spades, picks, &c. . . 50 00
Two horses, with rubble wagon to convey stone, slate, earth, &c. . . 200 00
One man to drive wagon, . . . 300 00
Timber and iron to repair rails, . . . 650 00
\$3,000 00

Saratoga Springs, Oct. 29, 1833.

The subscriber, at the request of the Committee of the Saratoga and Schenectady Railroad Company, has examined the mason work on the whole line of Road. The following is the result of his observations:

The walls at Schenectady are in good condition, and may stand for several years, with the exception of about thirty feet, between the second and third street bridges, from Railroad office, which stands in need of some repairs, the cost of which will not exceed the sum of twenty-five dollars.

The culvert at Saunders's Flats, now rebuilding, can be completed in two or three weeks; from the plan on which it is now constructing, it will be a permanent and substantial work. The temporary support of the Road at that place will answer the Company for the transportation of passengers and freight, during the construction of the culvert, and longer if it were necessary.

The mason work at the Kayaderoseras bridge is executed in a good and substantial manner, and the bridge itself is well braced, and abundantly strong for all the purposes of the road.

All the other culverts and drains on the line of Road appear to have been well built, and are now in good order and condition.

All which is respectfully submitted,
JAMES VANDENBURGH.

1832.	Number of Passengers.	Amount of Expenditures.	Receipts for Passengers.	Number of Passengers.	Amount of Expenditures.	Receipts for Passengers.	Number of Passengers.	Amount of Expenditures.	Receipts for Freight.	Total.	Increase.
January,	10322	\$4089 58	\$7539 74	42696	\$12001 34	\$31208 13	\$3043 92	\$34252 05	\$19784 46		
February,											
March,											
April,											
May,											
June,											
July,											
August,											
September,											
October,											
November,											
December,											

Recapitulation.	
Number of Passengers that travelled on the Road from 12th July up to 31st December, 1832, . . .	10322
Do. do. from 1st January up to 30th November, 1833, . . .	42696
Total, . . .	53018
Amount received for passengers in 1832, from 12th July up to 31st December, . . .	\$7539 74
Do. do. in 1833, from 1st January up to 30th December, . . .	31208 13
Do. do. for freight, . . .	3043 92
Amount due to the Company, for freight previous to the 1st November, to be collected, . . .	250 00
Amount to be received from U. S., for carrying the mail in 1833, due 1st January next, . . .	525 00
Gains on the sales of Stock in April, 1833, . . .	811 50
	\$43478 29
Total expenditures for conducting the operations of the Road . . .	\$16990 02
Net profits, . . .	26487 37
Paid to the Stockholders in September, 1833, the first regular dividend, 5 per cent. on the capital, . . .	14250 00
Balance . . .	12237 37
Estimate of net profits (chiefly from freight) in December and January, . . .	2200 00
There will be on the 1st February,	

towards the second regular semi-annual dividend, - - - - - \$14437 37

Note.—By looking at the above dates, it will be perceived that the receipts of the Company for the months of July, August, September, October, November, and December, 1832, exceed the disbursements by \$2550 16, and that the receipts of the Road for the months of January, February, and March, of this present year, fell short of the disbursements for that period, by \$932 57, so that deducting this last amount from the profits on the 31st December, 1832, those profits are reduced at the end of March, 1833, to \$1617 59, or about half of one per cent. on the capital; so that all the profits of the Road, with the exception of this \$1617 59, have been made since 1st April, of the present year, 1833.

THE GENESEE AND ALLEGANY CANAL.

(Continued from page 53.)

To the Honorable Canal Commissioners of the State of New-York.

GENTLEMEN—

Agreeably to a request communicated to me by the Hon. William C. Bouck, I have examined three of the canal routes authorized to be surveyed by an act of the legislature of the winter of 1825, to wit: One from Portland, Chataque county, to the head of the Chataque lake; one from Lake Erie to Allegany river, through the valley of the Conawango; one from Scottsville, by the way of La Roy, to the upper falls of the Genesee river; and also a part of the route from Rochester to Allegany at Olean, through the valley of Genesee river. These I shall take up in the order in which they are mentioned.

1. Route from Portland to the head of Chataque lake. I arrived at Portland on the 20th of September. The harbor here is of considerable importance, as it is becoming a principal landing place, not only for the goods which are consumed in its immediate neighborhood, but also for much of the merchandise that is designed to go down the Allegany river. It is situated on lake Erie, in Chataque county, about sixty miles above Buffalo, and is formed on the west by a bar of sand and gravel, which extends into the lake about eighty rods, and upon which a pier and store house are already erected. From this point, the bar turns at an angle of about ninety degrees, and takes an easterly direction until it meets the shore, leaving a space or entrance of about one hundred feet in width, a short distance east of the angular point, as is represented in the subjoined map and plan.

A pier of proper height commenced at this opening and opposite the one on the west side and extending in an easterly direction along the bar seventy-two rods, thence turning at an angle of about eighty degrees and running to the shore, would make a very commodious and cheap harbor, giving an area of six hundred and sixty square rods of six and a half feet of water, and an area of two thousand seven hundred and seventy-two square rods of three and a half feet water. After a cursory examination of the country between Lake Erie and Chataque, I judged the route to be practicable, and commenced taking levels at the harbor, and proceeded to the last mentioned lake. The difference of elevation between the two is 723.9 feet, which is the amount of lockage on this route. The distance between the two points is about ten and a quarter miles, the first seven and a half of which are remarkably favorable; the surface of the ground is very smooth and regular, the soil an easy sandy loam, and the grubbing and clearing light. The remaining distance will be a deep and expensive cut through a ridge, rising in the distance of twenty-one chains to fifty-two feet above our level; thence gradually descending to the level again, in the distance of one hundred and ninety-nine chains, making an average cutting of twenty-six feet. The soil is a clayey loam, and there are no indications of rock even in the bottoms of deep wells; and as a further proof of this,

we found no rock in the ravine formed by the Little Chataque, which winds round the foot of this ridge, and which within two miles is at least two hundred feet below our level.

This route must be supplied with water from the Chataque lake, which I think will be adequate. I gauged its outlet on the 3d of October last, during a very severe drought, and it then furnished 2295 cubic feet of water in a minute.

Estimate of expenses.

7½ miles at \$4000, including contingencies,	\$30,000 00
2½ miles deep cutting, at \$114-322,	314,385 00
724 feet lockage, (timber locks,) at \$75 per foot,	54,300 00
	\$398,685 00

Second Route from Lake Erie to Allegany, through the Valley of the Conawango.

I commenced taking levels at the head of the first rapid on the Chataque* outlet, near the village of Jamestown, and proceeded down its valley to Warren on the Allegany river. This outlet is remarkably serpentine, but as the flats are wide, the canal will not require to follow its windings, but may be carried across from bend to bend, as designated on the subjoined map.

The distance, as we collected it from maps of actual surveys, is about twenty-four miles, and the whole descent is one hundred and thirty-two feet. We found no obstructions in this route, with the exception of about three-fourths of a mile of steep banks; but as these are not high or rocky, and the soil an easy loam, we did not consider them formidable.

About four and a half miles of this distance, from the heads of the first rapids, where we commenced taking levels, must principally be fed by the waters of the outlet, taken directly from this point; below which the Cassadaga and several other streams come in sufficient for a supply.

By using wood for locks, the whole expense of constructing a canal down this valley, including these and every contingency, will not much exceed three thousand five hundred dollars per mile, as will be seen by the following estimate:

Grubbing and clearing 24 miles, at \$400 per mile,	\$9,600 00
Excavating 4 feet deep, \$2,124 per mile,	50,976 00
Lockage 132 feet, \$75 per foot, average cost per mile \$412.50,	9,900 00
Contingencies at \$564 per mile,	13,536 00
	\$84,012 00

On our return from these examinations, we commenced at the mouth of the Conawango, where it comes into the Chataque outlet, and ran a level up to its source, making the summit at this place only six feet higher than the Chataque lake. We had been led to believe that we should find a sufficiency of water here to supply this level and the locks, as far as Cattaraugus creek, and also down the Conawango as far as necessary: but in this we were disappointed.

The streams in this quarter, during the dry season of the year, furnish very little water, and cannot therefore be depended upon. We ran a level to the south branch of the Cattaraugus, with a view of ascertaining the practicability of bringing it in as a feeder; but it was too low, and there was no longer any hope of finding water on this summit, except by the way of Chataque outlet, which I was satisfied could be easily effected, by maintaining the level along the south side of the ridge between Lake Erie and the valley of the Conawango, in a westerly direction, until it terminated at the point proposed, as delineated on the map.

* Chataque lake, as I was informed by Mr. William Peacock, agent for the Holland land company, contains by actual survey 16,000 acres, and is 18 miles in length. The depth in its middle will not vary from 30 to 100 feet. I gauged its outlet on the 24th of October last, during a severe drought, and it then furnished 2295 cubic feet of water in a minute.

Besides the water which would be here supplied for the use of this level and the lockage, from the summit at the head of the Conawango to Cattaraugus creek, (say 470 feet,) we shall be able to command several other considerable feeders, amongst which are Cherry and Clear creeks; the one furnishing about four hundred and the other about six hundred cubic feet of water per minute, even in the driest times.

The route, so far as I am able to judge from actual observation, and from the concurrent information of several intelligent persons, I have no hesitation in saying is practicable, and a considerable part of it favorable. The soil is easy, and unencumbered with rock: there will be no deep cutting, and but one considerable embankment, which will be at the Cassadaga outlet.

We did not run a level so as to ascertain where it would be necessary to cross the stream, and could not therefore determine as to the cost, but presume it would not vary much from \$15,000, including the culvert.

The other expenses may safely be put at \$4,500 per mile.

Distance 30 miles; amount of expense,	\$135,000
Embankment and culvert,	15,000

\$150,000

The face of the country from the summit at the head of the Conawango to Cattaraugus creek, is considerably cut up with ravines; but as they generally run parallel with the line which we wish to pursue, (especially if the southern summit be adopted, which we also examined, and which is probably the best of the two,) no very important inconvenience will be sustained on account of them, and we shall be enabled to choose our ground, in reference to the most direct and feasible route. The expense upon this part of the line, exclusive of lockage, may very properly be compared with that last above mentioned, except in relation to the culvert and embankment of Cassadaga creek.

Distance 5 miles, at \$4,500 per mile,	\$22,500
Lockage, 474 feet, at \$75 per foot,	35,550

\$58,050

I assume 474 feet of lockage at this place, knowing that the whole amount is 724 feet, and believing, from information, that the bed of the creek at Lodi is 250 feet above the surface of the lake. As the ground will be equally as favorable, or nearly so, and materials for the construction of locks as convenient, no great difference of expense will grow out of any error which may be committed in this calculation.

The point at which the Cattaraugus* can be most conveniently crossed, I think, is at Lodi: and this can best be effected by means of a dam. From this point we can easily wind out of its valley, and command its waters, which are amply sufficient to feed towards Buffalo.

Between the summit at the head of the Conawango and Buffalo, I did not deem it expedient to take any levels, as we had already ascertained the heights of the summits and the amount of lockage.

In proceeding from Lodi to Buffalo, we pass down upon the flats of Cattaraugus creek, which are often extensive, and always wide enough for the passage of the canal without any extra expense. In the distance of about six miles, we wind completely out of its valley on to the bank of the lake, which descends very gradually, and presents an even, regular surface. This continues all the way to Buffalo, with the exception of two ravines, one formed by the Eighteen-mile creek, the other by Clear creek, which must be passed by culverts and embankments with considerable expense. This, however, will not exceed, in my opinion, \$20,000 at each place. The excavation simply on this portion of the line will not cost above \$1900 per mile; but as there will be more culverts, bridges and embankments, here than on any preceding portion, I think the expense, exclusive of lockage and the two heavy embankments, may be estimated at \$5000 per mile.

Distance 30 miles, at \$5000 per mile,	\$150,000
Two culverts and embankments, at \$20,000 each,	40,000
Lockage 250 feet, at \$75 per foot,	18,750
Dam at Lodi,	2,500
	\$211,250

* This is a large and durable stream, and at all seasons of the year will afford not less than 5000 cubic feet of water in a minute.

In conclusion, I have only to add, that, if there be any thing to boast of in the patronage and support of a public company, Dr. Church has more to say for himself in this respect than the Messrs. Heaton; for whereas they have but very late issued proposals for such a company, while it is a considerable time since a company was actually formed for the purpose of working Dr. Church's carriages, not only on the road between London and Birmingham, but between Birmingham, Manchester, and Liverpool.

I remain, sir, your obedient servant,

IMPARTIAL.

Birmingham, Oct. 3, 1833.

On the Microscope—Method of Constructing, &c. [From Partington's British Cyclopaedia.]

The history of this instrument is veiled in considerable obscurity, and among the moderns the discovery of the microscope has been claimed by several individuals. The ancients appear to have been acquainted with it in one of its forms; for Seneca says, "Letters, though minute and obscure, appear larger and clearer through a glass bubble filled with water." In the middle ages this knowledge was lost. The invention of the modern instrument is attributed by the celebrated Dutch mathematician, Huygens, to a countryman of his, named Drebbel, who constructed them about 1621, or 31 years after the invention of the telescope. Borelli attributes it to Jansen, the reputed contriver of the telescope; Viviani to Galileo. The first compound microscope, consisting of two double convex lenses, seems to have been made by F. Fontana, a Neapolitan, who dates his invention from the year 1618.

The numerous forms of microscopes may be included under the heads of single, compound refracting, and compound reflecting microscopes. The theory of the *single microscope* may be thus explained: We all know that at a small distance we see more distinctly than at a large. If we look at two men, one 200 feet distant, the other 100 feet, the former will appear only one half the height of the latter, or the angle which the latter subtends to the eye of the observer will be twice that subtended by the former. Hence we must conclude that the nearer we can bring an object to the eye the larger it will appear. Now if, to render the parts of a minute object distinguishable, we bring it very near the eye, (suppose within one or two inches,) it will become very indistinct and confused, in consequence of the great divergence of the rays of light from the object, and the power of the crystalline lens of the eye not being sufficient to collect the rays whereby an image of the object may be formed on the retina at the proper distance on the back of the eye. Now, if we employ a single microscope, which consists of a convex lens, usually made of glass, (though any other transparent substance would have the same power in a greater or less degree,) and mounted in a brass setting, and place it between the object and the eye, the former being in the focus of the glass, the diverging rays from the object will be refracted and rendered parallel by the lens, and thus we shall obtain a distinct and near view of the object. The increase of apparent magnitude obtained by the employment of lenses is proportioned to the difference of the distance of an object from the lens and the dis-

tance when seen without its assistance. This latter distance, (the distance of distinct vision of minute objects with the naked eye,) varies in different persons, and at different periods of life. Some measure, therefore, must be assumed as a standard, before we can express the amplifying power of a lens, so as mutually to have the same idea of the magnitude of an object. Some authors adopt ten inches as the standard of the focus of the eye, under ordinary circumstances, and its decimal character makes it a convenient multiplier or divisor. With this decimal standard we can determine the magnifying power of lenses of any focal length, or formed of any substance (media). Thus, if we have a lens which requires for distinct vision the object to be one inch from its centre, (in a double convex,) we must divide the standard ten by one, which will give ten as the magnifying power. If the lens require the object to be $\frac{1}{10}$ of an inch distant, its magnifying power will be 250. We have called the magnifying power in the first instance ten, because the length of the object is increased ten times; but, as its breadth is also increased ten times, the real magnifying power of the lens is ten times ten, or 100. The common form of the magnifiers employed for microscopes is double convex, and they should be made as thin as possible; for the wandering or spreading out of the rays proceeding from an object when refracted by a lens with spherical surfaces, whereby an indistinctness is produced in its image, will be decreased as the square of the thickness of the lens employed, and the loss of light in passing through the lens is less in proportion as it is thin.

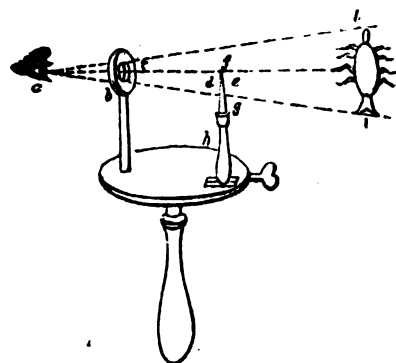
Within a few years diamonds have been formed into lenses in consequence of their high refractive power, whereby we can obtain lenses of any degree of magnifying power with comparatively shallow curves; and, as the dispersion of color in this substance is very low, the lens is nearly achromatic. Next to the diamond the sapphire possesses all the powers requisite for the formation of perfect magnifiers, and presents less difficulty in their construction; hence the expense of employing it is considerably less.

A *compound refracting microscope* is an instrument consisting of two or more convex lenses, by one of which an enlarged image of the object is formed, and then by means of the other, employed as an eye-glass, a magnified representation of the enlarged image is obtained. The distance at which the two lenses of a compound microscope are placed from each other must always exceed the sum of their focal lengths, in order that the image may be formed by the object-glass in the anterior focus of the eye-glass. Compound microscopes have been constructed of almost all possible dimensions, from a few inches in length to twenty feet; but from experience it appears that whenever their magnitude is augmented beyond a certain point the effect is diminished, though we suppose the amplifying power of both microscopes the same.

The *solar microscope* consists of a common microscope connected with a reflector and condenser, the former being used to throw the sun's light on the latter, by which it is condensed to illuminate the object placed in its focus. This object is also in the focus of the microscopic lens on the other side of it, which transmits a magnified image of it to

a wall or screen, (sometimes a combination of two magnifying lenses is used.) The magnifying power will be greater in proportion as the focal distance of the object-glass compared with the distance of the wall or screen from the object-glass is less. The principle of the *lucernal microscope* is the same, except that a lamp is used instead of the sun to illuminate the objects; this lamp is enclosed in a lantern, to screen the light from the observers.

Having thus given a general outline of the arrangement of the microscope in its various forms it will now be advisable to furnish our readers with such graphic and descriptive particulars as will enable any ingenious workman, reading this article, in conjunction with our treatise on Optics, (which will be inserted hereafter,) to construct the instrument. To render this systematic and intelligible, it may be advisable to commence with the most simple form.



A very convenient form of microscope is shown in the preceding engraving, where *b* is a circular piece of brass or ivory, in the middle of which is a small hole, one-twentieth of an inch diameter: in this hole is fixed, with a wire, a small lens, whose focal distance is *c d*. At that point is placed a pair of pliers, *g h*, which may be adjusted by means of the sliding screw, as in the figure, and opened by means of two little studs. The object may be viewed with the eye placed in the other focus of the lens at *a*; and, according to the focal length of the lens, the object, *f*, will appear more or less magnified, as represented at *i l*. If the focal length be half or one-fourth of an inch, the length, surface, and bulk, of the object will be magnified in a similar proportion. This small instrument may be put into a case for the pocket. Those lenses whose focal lengths are three-tenths, four-tenths, and five-tenths of an inch, are the best for common use.

Since the nearer the eye can approach to an object the larger it appears, it is plain, a double and equally convex lens magnifies more than a plano-convex lens; because, if the sphere or convexity be the same, the focal length of the former is but half that of the latter; and, since the double convex consists of two segments of a sphere, the more an object is to be magnified, the greater must the convexity be, and therefore the smaller the sphere; till at last the utmost degree of magnifying power will require that these segments become hemispheres, and, consequently, the lens will be reduced to a perfect spherule, or very small sphere.

If the radius of the spherule be one-tenth of an inch, the eye will have distinct vision of an object by means thereof, at the distance of $1\frac{1}{2}$ radius, (that is, three-twentieths

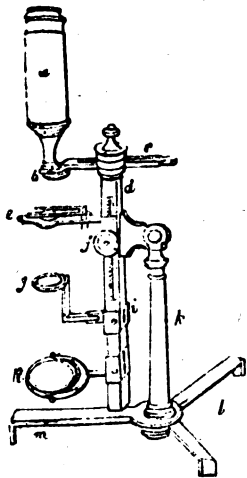
of an inch,) and, as this is but the fortieth part of six inches, the length of an object will be magnified forty times, the surface 1600 times, and the solidity 64,000 times, by such a small sphere.

If the radius of a spherule be but one-twentieth of an inch, then will the eye have distinct vision of an object at the distance of three-fortieths of an inch, and as this is but the eightieth part of six inches, the length of objects will appear eighty times greater, the surface 6400 times, and the bulk 512,000 times greater, to the naked eye at six inches distance.

In using these spherule microscopes, the objects are to be placed in one focus and the eye in the other; and since the focus is so exceedingly near the glass, it is impossible to view any but pellucid bodies; for, if any opaque object were to be applied, the eye being, as it were, just on the spherule, would entirely prevent any light falling on it, and it would be too obscure to be viewed.

To remedy this inconvenience, the focal length should be increased and a concave mirror substituted for the plate *b*. The object, *f*, being placed in the focus of the mirror, is illuminated by reflected light, and the most opaque insect may thus be seen with advantage to the naturalist. If the instrument thus arranged be directed towards the sun, the effect will be very materially improved; and when this cannot be accomplished, a sheet of white paper should be placed beneath the instrument.

The compound microscope, as made by Messrs. Jones, of Holborn, is shown in the engraving beneath. The body of the in-



strument, *a*, is screwed to the horizontal sliding arm, *c*. At *b* is a circular plate, containing a series of glasses, varying in their magnifying power. The objects to be magnified are placed in the stage, *e*, and the proper focus obtained by moving the rack at *f*. The lens *g* is employed to concentrate the light of a lamp, or that of the sun, on the object to be examined. The reflector at *h* has two mirrors, the one concave, the other flat. The whole instrument is supported by the pillar, *k*, and the triangular stand, *l m*.

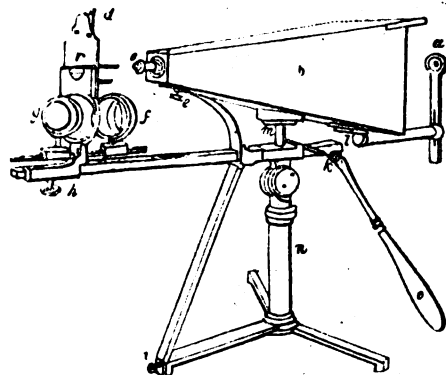
The great facility with which objects can be represented on paper, or a rough glass, in the camera obscura, and copies drawn from them by any person, though unskilled in drawing, evidently suggested the application of the microscope to this instrument. The greatest number of experiments that appear to have been made with this view, were by Mr. Martin and Mr. Adams, the former of whom frequently applied the micros-

cope to the portable camera, and with much effect. But these instruments being found to answer only with the assistance of the sun, Mr. Adams directed his experiments to the construction of an instrument of more extended utility, which could be equally employed in the day and by night. He accordingly succeeded so far as to produce, by candle-light, the images of objects refracted from a single magnifier, upon one or two large convex lenses (of about five inches, or upwards, in diameter,) at the end of a pyramidal-shaped box, in a very pleasing manner, so as to give opaque objects, as well as transparent ones, the utmost distinctness of representation; but still the light of a candle, or lamp, was found generally insufficient to throw the requisite degree of illumination on the objects. The invention of the Argand lamp offered a complete remedy for this defect, by the intensity and steadiness of its light.

The advantages of this excellently-conceived instrument are numerous and important. "As the far greater part of the objects which surround us are opaque," says Mr. Adams, "and very few are sufficiently transparent to be examined by the common microscopes, an instrument that could be readily applied to the examination of opaque objects has always been a desideratum. Even in the examination of transparent objects, many of the fine and more curious portions are lost, and drowned, as it were, in the light which must be transmitted through them; while different parts of the same object appear only as dark lines or spots, because they are so opaque as not to permit any light to pass through them. These difficulties, as well as many more, are obviated in the lucernal microscopes, by which opaque objects of various sizes may be seen with ease and distinctness, the beautiful colors with which most of them are adorned are rendered more brilliant, without changing in the least the real tint of the color, and the concave and convex parts retain also their proper form. The facility with which all opaque objects are applied to this instrument is another considerable advantage, and almost peculiar to itself: as the texture and configuration of the more tender parts are often hurt by previous preparation, every object may be examined by this instrument first as opaque, and afterwards (if the texture will admit of it) as transparent. The lucernal microscope does not in the least fatigue the eye; the object appears like nature itself, giving ease to the sight and pleasure to the mind: there is also, in the use of this instrument, no occasion to shut the eye which is not directed to the object. A further advantage peculiar to this microscope is that by it the outlines of every object may be taken, even by those who are not accustomed to draw; while those who can draw well will receive great assistance, and execute their work with more accuracy, and in less time, than they would otherwise have been able to have performed it. Transparent objects as well as opaque may be copied in the same manner. The instrument may be used at any time of the day, but the best effect is by night; in which respect it has a superiority over the solar microscope, as that instrument can be used only when the sun shines.

"Transparent objects may be examined with the lucernal microscope in three or

four different modes, from a blaze of light almost too great for the eye to bear to that which is perfectly easy to it; and, by the addition of a tin lantern to the apparatus, may be thrown on a screen, and exhibited at one view to a large company, as by the solar microscope."



In the above engraving we give a view of this instrument, mounted to examine opaque objects. *b* is a large mahogany pyramidal box, which forms the body of the microscope; it is supported firmly on the brass pillar, *n*, by means of the socket, *m*, and the curved piece, *c*. *a* is a guide for the eye, in order to direct it in the axis of the lenses; it consists of two brass tubes, *l*, one sliding within the other, and a vertical flat piece, at the top of which is the hole for the eye. The inner tube may be pulled out, or pushed in, to adjust it to the focus of the glasses. The vertical piece may be raised or depressed, that the hole through which the object is to be viewed may coincide with the centre of the field of view; it is moved by a milled screw, which could not be shown in this figure. At *l* is a dove-tailed piece of brass, made to receive the dove-tail at the end of the tubes, by which it is attached to the wooden box. The tubes may be removed from this box occasionally, for the convenience of packing it up in a less compass. At the small end of the cone is placed a tube, which carries the magnifiers, one of which is represented at *c*; the tube may be unscrewed occasionally from the wooden body. Beneath the cone is placed a long square bar, which passes through and carries the stage or frame that holds the objects; this bar may be moved backward or forward, in order to adjust it to the focus, by means of the pinion, *k*. A handle furnished with a universal joint, for more conveniently turning the pinion, is shown at *o*. When the handle is removed a nut may be used in its stead. The stage, *h*, for opaque objects, fits upon the bar by means of a socket, and is brought nearer to or removed further from the magnifying lens by turning the pinion, *k*; the objects are placed in the front side of the stage. The two upper pieces of brass, *r*, are moveable; they are fixed to a plate, which is acted on by a spiral spring, that presses them down, and confines the slider with the objects: this plate, and the two upper pieces of brass, are lifted up by the small nut, *d*.

At the lower part of the stage there is a semi-circular lump of glass, *g*, which is designed to receive the light from the lamp, and to collect and throw it on the concave mirror, *f*, whence it is reflected on the object. The upper part of the opaque stage takes out, that the stage for transparent objects may be inserted in its place.

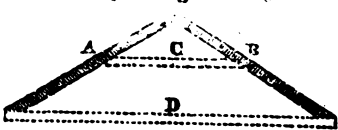
Animal Mechanics, or Proofs of Design in the Animal Frame. [From the Library of Useful Knowledge.]

(Continued from page 57.)

Did the reader ever notice how the walls of a house are assisted when thin and overburdened with a roof?

The *wall plate* is a portion of timber built into the wall, to which a transverse or tie-beam is attached by carpentry. This *cogging*, as it is termed, keeps the wall in the perpendicular, and prevents any lateral pressure of the roof.† We sometimes see a more clumsy contrivance, a clasp, or a round plate of iron, upon the side of a wall; this has a screw going into the ends of a cross-beam, and by embracing a large portion of the brick-work, it holds the wall from shifting at this point. Or take the instance of a roof supported on inclined rafters, A B:

Fig. 2.

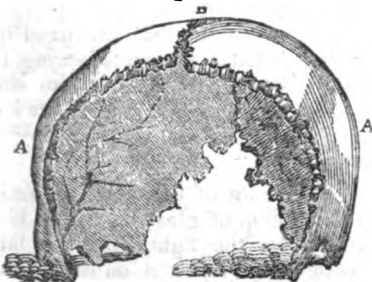


Were they thus, without further security, placed upon the walls, the weight would tend to spur or press out the walls, which must be strong and heavy, to support the roof; therefore the skeleton of the roof is made into a *truss*, (for so the whole joined carpentry is called.) The upper cross-beam, marked by the dotted lines C, is a collar-beam, connecting the rafters of the roof, and stiffening them, and making the weight bear perpendicularly upon the walls. When the transverse beam joins the extremities of the rafters, as indicated by the lower outline, D, it is called a *tie-beam*, and is more powerful still in preventing the rafters from pushing out the walls.

Now, when a man bears a burden upon his head, the pressure, or horizontal push, comes upon the lower part of the *parietal bones*, and if they had not a tie-beam, they would in fact be spurred out, and the bones of the head be crushed down. But the temporal bone, D, and still more, the sphenoid bone, E, by running across the base of the skull, and having their edges lapping over the lower part of the great walls, or the parietal bones, lock in the walls as if they had iron plates, and answer the purpose of the tie-beam in the roof, or the iron plate in the walls. But the connection is at the same time so secure, that these bones act equally as a *straining piece*, that is, as a piece of timber, preventing the tendency of the sides of the skull to each other.

It may be said, that the skull is not so much like the wall of a house as like the arch of a bridge: let us then consider it in this light.

Fig. 3.



We have here the two parietal bones, separated and resting against each other, so

as to form an arch. In the centering, which is the wooden frame for supporting a stone arch while building, there are some principles that are applicable to the head.

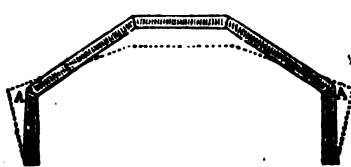
We see that the arch formed by the two parietal bones is not a perfect semi-circle; there is a projection at the centre of each bone: the bone is more convex, and thicker at this part.

The cause assigned for this is, that it is the point from which ossification begins, and where it is, therefore, most perfect. But this is to admit a dangerous principle, that the forms of the bones are matter of chance; and thence we are left without a motive for study, and make no endeavor to comprehend the uses of parts. We find that all the parts which are most exposed to injury are thus strengthened: the centre of the forehead, and the projecting point of the skull behind, and the lateral centres of the parietal and frontal bones. The parts of the head which would strike upon the ground when a man falls are the strongest, and the projecting arch of the parietal bone is a protection to the weaker temporal bone.

If we compare the skull to the *centering*, where a bridge is to be built over a navigable river, and consequently where the space must be free in the middle, we find that the scientific workmen are careful, by a transverse beam, to protect the points where the principal thrust will be made in carrying up the masonry. This beam does not act as a tie-beam, but as a straining-piece, preventing the arch from being crushed in at this point.

The necessity of strengthening certain points is well exhibited in the carpentry of

Fig. 4.



roofs. In this figure it is clear that the points A A will receive the pressure of the roof, and if the joining of the puncheons* and rafters be not secure, it will sink down in the form of the dotted line. The workmen would apply braces at these angles to strengthen them.

In the arch, and at the corresponding points of the parietal bones, the object is attained by strengthening these points by increase of their convexity and thickness; and where the workman would support the angles by braces, there are ridges of bone in the calvaria,* or roof of the skull.

If a stone arch fall it must give way in two places at the same time; the centre cannot sink unless that part of the arch which springs from the pier yields; and in all arches, from the imperfect Roman arch to that built upon modern principles, the aim of the architect is to give security to this point.

In the Roman bridges still entire, the arch rises high, with little inclination at the lower part; and in bridges of a more modern date, we see a mass of masonry erected on the pier, sometimes assuming the form of ornament, sometimes of a tower or gateway, but obviously intended at the same time, by the perpendicular load, to resist the horizontal

* The puncheons are the upright lateral pieces; the rafters are the timbers which lie oblique, and join the puncheons at A A.

pressure of the arch. If this be omitted in more modern buildings, it is supplied by a finer art, which gives security to the masonry of the pier, (to borrow the terms of anatomy,) by its internal structure.

In what is termed Gothic architecture, we see a flying buttress springing from the outer wall, carried over the roof of the aisle, and abutting against the wall of the upper part, or *clere-story*. From the upright part of this masonry, a pinnacle is raised, which at first appears to be a mere ornament, but which is necessary, by its perpendicular weight, to counteract the horizontal thrust of the arch.

AGRICULTURE, &c.

DRILL MACHINE—IMPORTANT IMPROVEMENT.—Last year Mr. John Geddes, farmer and joiner, Cargen bridge, who some time ago received, from the Highland Society of Scotland, a handsome premium for the best turnip drill-machine now in use, invented an apparatus for sowing and harrowing, which weighs 50 lbs., may be purchased for the same number of shillings, and is so exceedingly handy that it can be attached in five minutes to a common plough, and set in motion to the astonishment of the sheeted seedsmen, and his friend the harrower, who foresee in this invention their occupation gone, with the exception of oats, and that too in the course of a few years. In the first instance, our friend drilled a field of barley, at the rate, not of 5, but 1½ bushels of seed per acre, and reared, notwithstanding, a full and fair average crop, and the calculation is that 12 shillings per acre for wheat and 10 shillings for barley may be saved on all the arable land in the country, placed under these descriptions of crop. Something, too, is gained in appearance: a succession of rows beautifully straight has a pleasing effect, and the opinion gains ground, that wheat thus raised will be easier reaped, and less liable to be lodged during wet weather. It is difficult to describe machinery in the absence of cuts; and all we say is, that the weight of the plough, by pressing on a wheel connected with the seed chest, causes it to revolve, and opens the valves with the greatest regularity. A small coulter cuts the soil to the proper width and depth, and no more; and two iron teeth, like the teeth of harrows, cover up the tiny drill, and complete the operation. From the position of the seed-box, nothing is trodden under foot: by reason of the wheel below the plough, the task of the horses is not harder than in ordinary cases, and a man, or even a lad, can plough, sow, and harrow, at the rate of one acre per day, or more. From the great breadth of oats planted, and the necessity which exists of breaking the stubborn glebe during winter, broadcasting this description of crop must still remain the favorite mode of husbandry; while, on the other hand, wheat and barley, from the success of the experiments already made, must, ere long, be drilled almost universally. By modifying the seed-chest and substituting one for another, according to the nature of the operation, potatoes may be planted, and beans and peas sown on the same principle. By means of an index, the quantity of seed required to be sown is regulated with mathematical accuracy, and can be increased or diminished according to circumstances.—[Dumfries Courier.]

[From the New-York Farmer.]
Suggestions relative to Farmers' Work for February. By the Editor.

Those of our subscribers who have the volume for 1833, will find an article on this subject at page 40. Its perusal may produce some good effect on the mind.

TAKING AN ACCOUNT OF STOCK.—During the last month a great number of the merchants in this city have been busy taking an account of their goods, debts and credits. By this practice they are enabled to ascertain whether they have made a profit or a loss. Let the result be as it may, the information is of much service in regulating their future course. Those farmers who have neglected to follow the example of the merchants should immediately set about it. The effect of taking an account of stock, and of keeping regular books, is very beneficial, causing the farmer to be more economical, more discriminating, more industrious, and more rational in his enjoyments.

MANURE.—Those who are in favor of fermented manure, and those who have greater facilities for carting into the fields in winter, should embrace favorable opportunities to cart it out from the yard, and deposit it in regularly formed heaps, where its juices will not wash away. In this state it will gradually ferment, and by the time it is wanted for use will be in a good condition. Manure should be collected into large heaps in the yard, and every kind of litter, ashes, pomice, &c. should be collected and deposited in alternate layers with the manure. If it is stirred once or twice and more litter added, it will be in a fine condition for use in the spring. Those who adopt this practice will find themselves paid in various ways. [See N. Y. Farmer, vol. 6, pages 327, 360.]

CUT HAY AND STRAW.—The advantages in using cut hay for horses, as well as cows and oxen, are the saving of one-third of the expense, and improving the condition of the stock, particularly those in years. [See N. Y. Farmer, vol. 7, pages 6, 11.]

SHEEP AND LAMBS.—But comparatively few farmers may be said to be very successful in sheep husbandry. There must be a cause for this, and every farmer, from public and private considerations, should make both observation and experiment. The inquiry should be made, are they less liable to diseases in summer than in winter and spring? At which season do they obtain food most adapted to their natures? In the season of vegetation they are fond of short, sweet pasture. In winter they generally get long dry hay, and often nothing else. This is sufficient to derange the system—to make the demands on the salivary and digestive powers too great. It would seem, therefore, that cut hay, mixed with a little bran, and occasionally salted a little, would be a more natural food. This, together with a few turnips, or other succulent food, would undoubtedly tend to invigorate them, and enable them to bring forth and sustain a more healthy progeny. Good covering, dry, warm, and spacious yards, are important. Some kind of condiment, too, is probably serviceable. [See present number, page 56.]

Cows.—Exposed to cold storms, when we have not an opportunity to stir sufficient to keep up animal heat, the human frame suffers much, and undergoes so great a derangement that death follows, if not soon relieved.

When cows are confined in a yard where they do not stir about as they would in a state of nature, they must certainly become greatly chilled, and consequently their appetites and digestive functions must suffer more or less. It seems unnatural that cows thus treated would bring forth healthy, vigorous calves. We are too apt to think that warm houses, thick clothing, and downy beds, were made for man, but the bleak heavens and the pelting storms for our domestic animals.

FREQUENT PLOUGHINGS.—When green crops or manure are turned under, it is evident that they should remain to ferment. If, however, the manure is fermented, it cannot be commingled too much. In an address before the South Carolina Agricultural Society, by Daniel K. Whitaker, we find reference to Mr. Tull's system.

A farmer, in that State, planted a field of Rye of seven acres, which he worked in the following manner. He ploughed one acre of the land; this he re-ploughed and ploughed another acre. He then ploughed the two acres already ploughed and ploughed a third acre, and proceeded in this manner, ploughing continually the land already ploughed, and adding an acre at each successive ploughing, till the whole field was completely ploughed. When this was done, the first acre had received seven ploughings, the second six, the third five, the fourth four, the fifth three, the sixth two, and the seventh one ploughing. He then cast in the grain, and harrowed it in, in the manner usually practised in the Eastern States. The result, as communicated to the Agricultural Society, was, that the product of grain harvested from each respective acre, was in exact proportion to the number of ploughings each acre had received; that which had received seven ploughings producing the most abundant crop, that which had received six ploughings, the next most abundant crop, and so on to that which had received only one ploughing, which produced the least of all. There is no doubt that by minutely pulverizing and frequently stirring the earth, and stirring it deeply, the product of a field may be greatly increased. But something more than this is necessary for him who would reap a succession of crops, in perpetuity, from the same land. He must give the plant food. He must supply it with a due portion of decayed animal or vegetable manure. It is a mistake to suppose that there is any principle of fertility in the primitive soils whatever, and this was the fatal error that lay at the foundation of Mr. Tull's system. Not all the pulverization which could be effected in the soil by a nine month's constant ploughing, would enable the planter to gather a crop of Cotton from a tract of barren sand.

FERMENTED AND UNFERMENTED MANURES.—Practical Agriculturists, (says Mr. Whitaker,) who have tried both the new and the old, prefer the old method. They find that the unfermented application creates too powerful a stimulus for healthy action in the plant, induces disease, and frequently kills, where it was only intended to nourish.

FOREIGN INTELLIGENCE.

FROM HAVANA, by the ship *Moro Castle*, we have papers of the 21st ult. They furnish no news. Our boatman, however, reports, upon the authority of a passenger, Capt. Trenor, of the *United States Army* that two days before sailing, he was informed by a merchant of Havana, that the intelligence had been received there from Spain, via Lisbon, that Mexico had called upon Spain to acknowledge her independence, threatening in case of refusal, a declaration of war against Spain. The inhabitants of Havana,

it is added, were in great dread lest the Queen should refuse, and war be the consequence. We see nothing of this in the *Diario*.

Barbadoes papers to Jan. 9th, received by the Savannah Georgian, contain the annexed intelligence, which possesses considerable interest:

Insurrection at Martinique.

BRIDGETOWN, Jan. 6.—By an arrival from Martinique, private letters have come to hand, which state that an insurrection had taken place amongst the slaves in that colony, and that in a skirmish between them and the military on the 24th ult., between 50 and 60 were killed, and 180 taken prisoners, with arms in their hands.

[The French brig *Adele*, Capt. Barron, at this port, left Martinique on the 29th Dec. Capt. B. informs us that the above account is much exaggerated. The slaves had no agency in the affair. Some free persons of color opposed themselves to the military; but before Capt. B. left, news was received that they had surrendered.—Eds. J. C.]

Yesterday morning the *Rosa*, a Spanish schooner of 75 tons burden, came into this port, a prize to H. M. brig *Despatch*, having on board 292 African negroes, consisting of 116 males and 176 females, between the ages of 10 and 18 years. The *Despatch* fell in with her on Christmas day, in lat 4, 30, N.; lon. 39, 16, W., bound, as she stated, to Havana.—On their arrival here, the captives were in excellent health, and seemed quite cheerful and contented.—The *Rosa* sailed last evening for Havana, under charge of an officer of the *Despatch*, to abide the decision of the mixed commission, when they will probably be declared free, and apprenticed out to whomsoever proposes for them, and the fortunate captors will be allowed £10 sterling per head for each—that is, provided they ever arrive there, which, from the leaky condition of the *Rosa*, on leaving this, is very questionable.

Latest from Africa, and Landers' Expedition.

BRIDGETOWN, JAN. 9.—By Captain Ellis, of the barque *Boddingtons*, which arrived here in distress on Sunday last, 70 days from Fernando Po, we have been politely favored with intelligence from the Coast of Africa, and with a corroboration of some facts which we had previously been made acquainted with. This vessel left Fernando Po on the 28th of October; her cargo consisted principally of palm oil, which, being put up in casks, some of which have proved to be unserviceable, leaked to such an extent as to create alarm for the safety of the vessel, a considerable quantity being pumped out every day. Capt. Ellis, accordingly, about three weeks since, found it necessary to steer for this island, as the nearest port he could fetch. The cargo, we understand, is being landed, for the purpose of the packages being repaired. We are happy to learn by this gentleman, that the health of Mr. Richard Lander, since he joined the steamer up the Niger, has greatly recovered. The *Columbine* sailed for Liverpool, with a cargo of palm oil, on the same day that the *Boddingtons* left, having on board as passenger Mr. Laird, one of the proprietors concerned in Landers' expedition. Mr. Laird has proceeded home for the express purpose of taking out another cargo to the interior, as the former goods were not adapted to the trade of the country. The mate of the *Columbine*, who succeeded to the command on the death of Captain Mitchell, had met with the like fate, had fallen a victim to the pestilence of the climate.—While Capt. Ellis was lying in the Cameroons river, six of the piratical crew belonging to the late schooner *Panda*, which was blown up, applied to King Agua, saying that they had been wrecked in a vessel bound to his river, and claimed his protection. The Chief believing their tale to be true, received them with kindness.

On the second day, four of them applied to Capt. Ellis and expressed their wish to get a passage to Bonny, Calabar, or New Calabar, and asked, if he could devise any means of getting there. Capt. Ellis having no suspicion of them, wrote a note to the sub-superintendent of Fernando Po, then at Bimbia, stating circumstances as they had related them; but the superintendent having been apprised by the Captain of His Majesty's ship *Curlaw*, of the circumstances connected with the capture and the destruction of the *Panda*, and the escape of the pirates, and a liberty sailor recognizing one of them as a notorious freebooter, they were immediately put in irons; upon which one of them offered to turn King's evidence against the others. A reward had been offered for the apprehension of the Captain of the *Pirate*, in consequence of which he was taken, and with the other men sent to Sierra Leone for trial.

See Summary, page 76.

NEW-YORK AMERICAN.

FEBRUARY 2-8, 1834.

LITERARY NOTICES.

No. XIII.

SALINE, (Washtenaw Co., M. T.) DEC. 7.]

I have just spent an hour with Mr. Risden, the Surveyor of a great part of Michigan, at whose public house I am now staying, in talking over the district with which he is familiar, and I shall avail myself of the information thus acquired, in filling up hereafter my notes upon the country. The conversation turning upon the healthfulness of Michigan, there was not one out of several residents present, who did not allow the existence of bilious fevers, and fever and ague in every part of the country; but they spoke of passing through these diseases as merely a slight process of *acclimating*, which in the general health of the country, was hardly to be considered. They asserted too, what I have before heard stated by more than one physician in the Territory, that Michigan is exempt from many of the diseases most fatal to human life at the East. Consumption, for instance, which a reference to the bills of mortality* will show, destroys as many in New York, take year and year together for several in succession, as does the yellow fever in New Orleans, is here unknown. Not only, I am told, do no cases originate here, but many persons from New York are pretended to have been cured of the complaint by coming to reside in Michigan. The most unhealthy points are in the vicinity of milldams, and of marshes, near both of which the settlers take particular pains to "locate." The first for the convenience of grinding and sawing, and near the last for the rich grass they afford with only the trouble of mowing. Health, indeed, is the last thing a settler seems to think of, by the way in which he chooses a site for his house. In a country so abounding with lakes and streams of the purest water, and filled with fish, that you may pass a dozen in a ride of as many miles, you but seldom find a house on their banks; while the purchaser of a new possession neglects alike the tempting looking oak opening, and erects his dwelling in the thick forest, provided only a road or trail passes within three feet of his door. A trail, by the way, I must tell you, is an Indian foot-path, that has been travelled perhaps for centuries, and bears here the same relation to an ordinary road, that a turnpike does to a Rail road in your State. He chooses, in short, the most fertile spot on his acres, in order to have a garden immediately around his house, which he places plump upon the road, in order to have it "more sociable-like, and see folks passing." His garden grows from almost nothing. The first year the hog pen and cow yard occupy the place designed for its commencement. They are moved further from the house the second year, and a few cabbages occupy the place which they have enriched by their temporary situation upon it. They move again on the second year, and the garden, which can now boast of a few currant bushes and a peach tree, expands over the place they have ceased to occupy. And now our settler having built a fine barn, and "got things snug about him," begins to like the look of the woods again, which he has so industriously swept from every spot that can be seen from his door. He shoulders his pick axe, he goes out into the woods, and selecting two of the straightest maple saplings he can find, they are at once disinterred, their heads chopped off to make these tall awkward things look civilized, and the pair of poles thrust into the ground within two feet of his door, are white-washed and called trees.

DEXTER, Washtenaw Co., DEC. 12.

I have been here two or three days; but so occupied in riding about looking at the country, that I have not till now attempted to finish this letter. Far different is the appearance of the cottages here from those described above, as the common residence of

new settlers. They build almost altogether in the oak openings; and as the country is now undulating, I have seen some cabins very prettily situated in clumps of oaks, a gun shot from the road, with fields of young wheat extending in every direction around them. The soil, when first turned up, is a kind of yellow gravel, very unpromising in its appearance; but it rapidly undergoes a chemical change, becoming almost black in fields of two years cultivation, and improving every season without the aid of a particle of manure. I have now got among the rolling land, in a region full of lakes and oak openings, of which hitherto I had only a taste. I need hardly say how much more grateful such a country is to my eye, than the level thickly timbered lands about Detroit and Monroe.

I came hither by way of the pretty village of Anne Arbour, which contains, I should think, seven or eight hundred inhabitants, many of whom, I am told, are very respectable English immigrants. I stopped at a farm house, about five miles from here, to dine. A white-headed boy of six or seven years old, was turning a grindstone before the door, while a couple of Indians sharpened their knives. Near them a miserable poney, with his wooden saddie covered with a freshly flayed deer, and a brindle wiry-haired dog, with the head of a wolf and the crest of a boar, skulked around the slaughtered game, and snarled in its protection, when, after dismounting, I approached it. His swarthy masters and myself entered the house together. *Tenepe keen chemowkomo*? ("Where is the white man?") said the oldest of the two to a very pretty Connecticut girl, who had recently followed her husband out to this country. She replied by pointing to him, working at a distance in a field, and the Indians sat down patiently till the farmer entered. The venison was then laid on a table, and a bargaining scene commenced, which lasted full half an hour. *Ceu-ne-shiu che-mocoman*. "No good, white man," said one of the red barterers, turning to me, as the white trader offered him what he thought too little for a whole deer. The bargain was struck, however, before a bystander could interpret the appeal for me. The skin still remained with the Indian, and I was not a little surprised to see produced from it a variety of articles of Indian produce, among which were large cakes of deer's tallow, about the size of an ordinary cheese. These were all traded away in succession, and a small cask produced by the Indian, was filled with whiskey on the spot; and the eldest mounting the poney, they both shook me by the hand, and soon disappeared with their poisonous burden, behind a turning of the road. They were of the Ottawa tribe, well-made men, though slightly built, and with aquiline noses and fine shaped heads, and each when I saw them, had the freest and most graceful step I ever saw, whether on the sod or in the ball-room. How complete was the metamorphosis when I overtook them half an hour afterward in the woods! The eldest, who could not have been more than five-and-thirty, was barely sober enough to guide his horse, and sitting with both arms around the barrel of whiskey on the pommel before him, he reminded me of an engraving of Bacchus in a very vulgar and not very witty book, called *Homer Travestie*. The Indian gravity which had before been preserved amid all the nervousness incident to a trading operation had now thoroughly deserted him, and toddling from side to side, he muttered a sort of recitative, which combined all the excellencies of the singing and reciting of a civilized toper. His companion, a youth of but seventeen, seemed perfectly sober, and stopping only occasionally to pick up the whip of the fumbling rider, he stepped so lightly by his horse's side, that the leaves scarcely rustled beneath his moccasins. I was somewhat pained, of course, at the exhibition, though I confess I was not a little diverted, while riding along for miles in the silent woods, with such grotesque company. The pedestrian continued as reserved and respectful as ever, but my fellow cavalier, after talking a quantity of gibberish to me, which was of course perfectly unintelligible, seemed to be at last quite angry because I could not understand him; then, after again becoming pacified, he found a new source of vehemence in urging me to "*schwap pasciche gun*," (trade my gun, to which he took a great fancy) for his "*paposhche pascocachee*," as he called a colt that followed the forlorn poney on which he rode. I could not help blaming myself, however, for having been so long diverted with the frailties of this hospitable Silenus, when at parting about nightfall where he struck into the forest, he gave me an invitation to his wigwam, 20 miles off, signifying the distance by raising all his fingers twice, at the same time using the words *hokee keen marchec neen wigwam*, (come to my wigwam!) How strangely are we constituted

that one should derive amusement in the woods from an exhibition which in a city would only excite pain and disgust. I have never seen a half-intoxicated Indian before without the deepest feelings of commiseration. As for the alleged crime of selling Indians whiskey, it is impossible to prevent it. The love of spirituous liquors is a natural craving of the red man, which is irrepressible, and as such I have heard the most humane and intelligent persons speak of it—people who have passed their lives among the Indians, and have done their best to snatch them from this perdition. The haughtiest Chief will travel a hundred miles for a pint of whiskey, and get drunk the moment he receives it, where soever he may be. Providence seems to have designed that this mysterious race should not continue upon the earth, and fate has infused a fatal thirst into their bosoms, which is hastening their doom with fearful celerity. But six years ago and the woods around me were alive with Indians, now they are only traversed by a few such stragglers as these. You may talk of civilizing them—but that too is impossible. You may more easily civilize the stupidest African than the most intelligent Indian—and yet who for a moment would compare the erect port and manly tread, the air, the blooded look of the one, with his keen sagacity and rare instincts, to the mishapen form, the shuffling gait and stupid bearing of the other? Where then lies the difficulty? The African is an imitative animal—the Indian is not. He will copy the form of your weapons, for he has felt their edge, and he will make himself ridiculous by wearing a cocked hat, because he conceives it to be an emblem of authority. Rings and bracelets he may wear, for they recommend him to his own tribe; but the forms and fashions of civilization he despises. The negro furnishes the best raw material for a dandy that can be had: he learns at once how to wear his hat and adjust his shirt collar according to the last mode of the white man. The Indian, if a fop, departs even further than usual from the costume of a European. He comes from nature's hands all that she ever intended him to be—the wild man of the woods. To the fleetness of the deer in traversing the forest, he unites the instinct of the hound in finding his way; and when you add to these the mental gift of a certain wild eloquence, wholly unimprovable by cultivation, you have nearly summed up the intellectual qualifications of the American savage—the genuine child of nature—the untamed—the untamable.

I had a long conversation on this subject yesterday, with a middle aged gentleman of high intelligence and character, for many years settled in the territory, and who has availed himself of unusual opportunities of studying Indian life and manners. We had been all day in a canoe paddled by ourselves, exploring a chain of small lakes in this vicinity; and the perfect stillness of the woods around, while floating at sunset over the transparent water, induced him to remark upon the rapid disappearance of the inhabitants; who, but six years since, when he first visited this part of Michigan, kept their canoes upon every stream in the country. The observation suggested the discussion, already alluded to, upon the feasibility of civilizing the Indians; and he told me a variety of anecdotes about a young chief with an unpronounceable name, whom, on various accounts he had once thought the fittest subject for social life he had ever met with among the aborigines. The conclusion of his relation was so whimsical and strikingly characteristic, that I will finish this letter with the details precisely as I took them down in my note book from the lips of my informant—our canoe, the while, being allowed to float as she listed along the placid bosom of one of those beautiful lakes into which the river Huron expands a few miles from its sources.

"As we came one day to the Indian encampment, Ketchewau-doug-enink caught me by the hand as usual, with his shrill exclamation of welcome, and my party proceeded at once to pitch our tent near his, before a blazing fire of logs. After affording us what assistance he could, the young chief left us; but in the evening he called in again at our tent, and brought his father and mother, his wife and three sisters with him. They all looked quite solemn, and in his manner, particularly, there was something altogether unusual. Young Ketchewau-doug-enink had been quite my friend, always appeared glad to see me, and was generally sociable in his way; but now he was grave and reserved, almost to severity. My familiarity with Indian character induced me to suppress every thing like surprise at such an extraordinary change of deportment, and we sat thus, I should think, for at least half an hour. At last the young Indian rose up in a formal way, and taking a position full in the light of the fire, began a speech abounding with gesture and vehemence. The amount of it was this: 'Listen, my friend; I see that you are wiser than any

of your white brethren." ["I must interrupt my story," said my companion, "to remind you that believing that my young Indian friend, who was a fine looking fellow, had some relish for civilization, and half a mind, indeed, to turn white man. I anticipated that some proposition to that effect would be the purport of his speech."] He continued—"I am glad to see that you love the Indians; that you are not ashamed of our mode of life. Let me tell you what I presume you already know, that the life of the white man is one of care and trouble. The Great Spirit has blessed his red children in a peculiar manner. We have no care. We are as *Sher-manitou** made us. We have not degenerated, but are still his favorites. You never see a wrinkle on the brow of an Indian. Look, my brother, at the forehead of my old father. It is as smooth as my own, though sixty winters have whitened his head. His days have glided on as undisturbed as the smooth stream before you."—[We were on the banks of the *Shiawasse*, interrupted the narrator.]—"Do you see, my brother, those pebbles in the bottom of the clear stream as it throws back the light of your fire? It is thus that every thought can be seen that dwells in the mind of the Indian. He has no disguise—no cause for it—the troubles of the white man disturb not the clear stream of his soul. Come with us—share with us the gifts of *Sher Manitou*—think no more of those distant lands of your childhood where men live but to harass each other, and gather riches that eat the soul up with care—come—here you will build your wigwam—I will help you—you shall have my sister for your wife—she shall weave your mats, and raise your corn, and dry your venison, which we will kill together in the woods. You have lived long enough a life of wretchedness; come and be happy with us."

I was curious to learn how the rest of the family, and especially the fair member of it particularly designated in this singular harangue, behaved while her brother was pronouncing it; and more than all, how the object of it himself received the address. I will endeavor to give you the exact replies of my interesting companion, without repeating the various questions from me which elicited them.

"My young friend sat down. Throughout his speech, the family observed the utmost silence. The lady in question was as indifferent as an Indian could be, at least in manner. They all looked at me for my opinion—the lady excepted. I will confess that I felt embarrassed, tho' I had but half a dozen Indians for my audience. An answer however was necessary. 'I thank you, my friend,' said I, 'and needed not this new proof of your friendship. I am sensible *Sher Manitou* has smiled upon you; that you are his favorite children. But we white men have been spoiled by education; we have been taught to think many things necessary that you red men can do well without; and inferior as our mode of life is to yours, it is not the least of its evils that it has unfitted us for the simple pleasures that *Sher-Manitou* every day gives you. I have friends and a mother far away to the rising sun. She does not know the red men, and might not be a mother to your sister. Your sister, if I should take her to the rising sun with me, would pine for her green woods and wigwam by the *Shiawasse*. She will doubtless be happier as she is. She will take for her husband some red man like yourself, who will love her, and prize the blessings which *Sher Manitou* yields you. I again thank you, my friend, and your sister. I must, after a few days, leave this country; but I shall bear my friends in my heart, and in the crowded city where the white men live, I shall often sigh for these green woods, and lament the absence of my red friends.'" H.

FANATICISM; by the author of the *Natural History of Enthusiasm*. 1 vol., N. Y.: JONATHAN LEAVITT.—What a magnificent and yet what a fearful subject is presented to an able, learned, and philosophical writer, in the single word which constitutes the title of this remarkable volume? Fanaticism! what of evil has it not accomplished, what of mighty, impassioned, and irresistible in our nature has it not been the means of developing? To write its history, to understand and appreciate its motives, to judge its deeds, good and evil, with impartiality, and to deduce from the wildest excesses of this universal passion—universal as having had existence in all time and among all peoples, civilized and savage—conclusions not wholly discouraging to, or dishonoring, the immortal longings of our nature, is the task undertaken in this work. The former book of the author on the

* *Sher-Manitou*, God; *Moow-Manitou*, the devil.

Natural History of Enthusiasm, preposessed us in favor of this one, and we have been in nowise disappointed in our anticipations. A profound, philosophical, and withal charitable and Christian spirit, pervades the whole work. The heart of man is depicted with a firm and skilful hand; and the disguises which self love interposes to prevent each one from classing himself with those where his character and propensities should in truth place him—from seeing himself, in short, as others see him—seem to be penetrated with a searching eye; and the workings of the passions are portrayed with startling fidelity.

The style is vigorous, rugged, and sometimes overstrained, yet always forcibly arresting the attention. The divisions of the work are somewhat arbitrary; and such as they are, they are designated by odd and fantastic titles. On this head, the writer thus explains himself:—

It will be better to seize upon certain leading varieties of our subjects, as marked by broad distinctions, easily traced in every age, and such as may be recognized, whenever they may recur, without hazard of mistake. These conspicuous varieties may be brought under four designations, of which the first will comprehend all instances wherein malignant religious sentiments turn inward upon the unhappy subject of them: to the second class will belong that more virulent sort of fanaticism which looks abroad for its victims: the third embraces the combination of intemperate religious zeal with military sentiments, or with national pride, and the love of power; to the fourth class must be reserved all instances of the more intellectual kind, and which stand connected with opinion and dogma. Our first sort then is *Austere*; the second *Cruel*; the third *Ambitious*; and the fourth *Factionous*.

Or, for the purpose of fixing a characteristic mark upon each of our classes, as above named, let it be permitted us to entitle them as follows—namely, the first, *The Fanaticism of the SCOURGE*; or of personal infliction: the second, *The Fanaticism of the BRAND*; or of immolation and cruelty: the third, *The Fanaticism of the BANNER*, or of ambition and conquest: and the fourth, *The Fanaticism of the SYMBOL*; or of creeds, dogmatism, and ecclesiastical virulence.

After these four divisions each treated at considerable length, follows the conclusion that "the religion of the Bible is not fanatical." This occupies two long sections, one devoted to the Old, the other to the New Testament—the whole written in the spirit of a pure, pious, and earnest Protestant.

It should be added, that this is the republication of an English work; and we see with satisfaction that the cognate topic of *Superstition* is next to be touched by the same vigorous hand.

THE SELECT JOURNAL OF FOREIGN LITERATURE.—No. V.—Boston, CHARLES BOWEN.—Sound judgment and discriminating taste continue to characterize the selections for this excellent periodical.—The *Life of Pym*, from the Westminster—a description by *Raoul Rochette*, translated from the *Journal des Savants*, of the large, and very remarkable mosaic found at *Pompeii*; and an original article, well done, on *Hamilton's Men and Manners in America*; are among the most interesting articles of this number. The critical notices, too, are instructive and various, while under the head of "Intelligence" a bird's-eye view is given of the movement of mind throughout Europe. To crown all, this Magazine is well printed.

CICERO, composing Vols. VIII, IX, and X, of the *Classical Family Library*, New York, HARPER & BROTHERS.—We are glad, after a long intermission, to find that this classical library is going on. It could not resume its progress under better auspices than those of Rome's great orator. The first two volumes contain the *Orations*, translated by Prof. *Duncan*. The third includes the *Offices*, translated by *Cockman*; and the *Essays on Old Age and Friendship*, translated by *Melmoth*. An accurate biographical sketch precedes the work; and at page 45 of it, is a letter from *Brutus* to *Cicero*, urging him to resist the tyranny of *Octavius*, just begin-

ning to bestride the Roman Empire, of which the sentiments might not be meditated in vain at this day.

IRELAND, A Tale by HARRIET MARTINEAU.—No. IX.—Philadelphia, E. LITTELL & T. HOLDEN.—A story of deep and thrilling interest, told with all the admirable writer's powers, is here produced to exemplify the silent miseries, which bad government, oppression, and ignorance entail on the Irish cottier, from generation to generation. It would be well for Ireland that both government and people would profit by the instructions of this well wrought tale.

YOUTH ADMONISHED—by J. THORNTON, author of *Bereaved Parents consoled*. New York: D. APPLETON & Co.—A well printed little pocket volume this, which in a brief view of the parable of the prodigal son, inculcates by modern instances, and much earnest discourse, the certainty that the paths of virtue are the paths of peace.

LITTELL'S MUSEUM OF FOREIGN LITERATURE, &c. for January. Philadelphia: E. LITTELL and T. HOLDEN.—We have only to speak in praise of this miscellany as embodying always a large proportion of well selected and amusing matter. The present number is ornamented with a fine engraving of a striking picture of the Deluge.

NORTH AMERICAN REVIEW, No. LXXXII. Boston: CHARLES BOWEN. New York: G. & C. & H. CARVILL.—The *Life of Cowper*, which is the first article in this number, is of itself sufficient to stamp it as an able and attractive one. It is written with a genuine admiration of the genius of this remarkable man, and a beautiful sympathy with the fearful trials to which his fine intellect and whole moral nature were subject. The admirers of Cowper will feel that justice is here done to his talents, and all gentleness exercised towards his infirmities. A good paper on botany and a capital one on *Story's Constitutional Law* precede a truly characteristic and interesting account of the American Whale Fishery—that hardest school of our hardy and adventurous seamen. Art. V, on the *last moments of eminent men*, is very pleasant reading—grave as the subject is. There is industry and good taste in the collection and arrangement of much anecdotal fact respecting the conduct of distinguished individuals, at the moment of entering upon the fearful passage to the grave. We have marked several interesting extracts, but with little hope of finding, for the present at least, any room for them in our crowded columns. Passing over other articles, we come to the concluding one, on *Hamilton's Men and Manners*, which is more bitter than able or well considered, save towards the close, when a better and higher tone is assumed and preserved.

THE TREASURY OF KNOWLEDGE AND LIBRARY OF REFERENCE, Parts IV, V and VI. New York: CONNER & COOKE.—This is truly what it purports to be—in a small compass a most abundant treasury of knowledge, on a vast variety of subjects. Part IV is a dictionary of quotations—V, *Sir Rich'd Phillips's Million of facts*, of which, if some few are spurious, the immense mass are correct—and VI is an *American biography*, brief but comprehensive.

LA REVUE FRANCAISE, for February; New York, HOSKINS & SNOWDEN.

LA FRANCE LITTERAIRE; No. : New York. BIBLIOTHEQUE CHOISIE DE LITERATURE FRANCAISE; Philadelphia, Carey Lea & Carey.—Here we have three French periodicals, each aiming to disseminate a knowledge of and taste for French literature. They are all comparatively cheap; well printed; and as to their contents well selected. We like the language well enough to wish that all may have abundant patronage.

It has been said, that *La France Littéraire* is got up to put down *La Revue Française*. The facts we believe to be pretty much these: the chief attrac-

tion to the mass of American subscribers to the *Courrier Francais*, is its literary character and extracts; and this, it was obvious, would be materially diminished by any publication which, in the more convenient and durable form of a monthly pamphlet, should give matter of the same character. Hence, in self-defence, the literary extracts of the *Courrier* were thrown into the same form; and as they are longer, *la France litteraire* is published once a fortnight instead of once a month, as *la Revue Francaise* is. It is, too, cheaper than *la Revue*, because the matter which composes it, serves for the two publications. In all this we see nothing but the proper regard, which every one feels, for his own interest; nor can it add to or derogate from the merit of either publication that it has a rival: on the contrary, each thereby will become more zealous to excel, and the reading public will be benefitted by the competition.

THE FOREIGN QUARTERLY REVIEW; No. XXIV; American edition No. IV: Philadelphia, T. W. Usick.—A good number—and then how cheap! three dollars per annum for a work that enlists such various talent. The article here upon the *Prussian System of Education*, that upon the *History of modern Italian freedom*, and that upon *Animal Magnetism*—in which the really surprising results supposed to have been accomplished by this revived *charlatannerie*, are most acutely examined—will recommend this periodical.

ENGLISH HISTORY ADAPTED TO THE USE OF SCHOOLS AND YOUNG PERSONS—by the author of *American Popular Lessons*. New York: R. Lockwood.—This is, with some modifications, omissions and additions, a republication—with what skill executed we confess we have not had time to examine; but we are willing to take it on trust, from the character and services of the lady, who presents it to the American public.

SUMMARY.

The Naval Lyceum is forming a collection of autographs of men of revolutionary fame. Among them they have obtained the following altogether remarkable letter addressed by John Hancock to Robert Morris:

COPY—"ON PUBLIC SERVICE."

Baltimore, January 24, 1777.

SIR—The Marine Committee, judging it of the utmost consequence that the *Frigate Virginia* should be got to sea as soon as possible, and finding it impracticable to procure here the necessary articles for the ship, without which she cannot proceed to sea, have determined to send to Philadelphia for them, and have sent the bearer, an officer of Capt. Nicholson's, to expedite the business; and I am now, in the name of the Marine Committee, to request you will immediately order such of the articles as are mentioned in the enclosed Memorandum, and can readily be got in Philadelphia, to be forwarded here without loss of time, in such manner as you shall judge best. The bearer will afford every aid in his power. I should think it would be no disservice in taking an Anchor and the Cables from one of the *Frigates* in Philadelphia, as you can with more ease replace them there, than we can procure them here; and all your *Frigates* are not in the readiness the *Virginia* is, and indeed she only waits for these articles. I submit it to you to conduct as you think best for the public service, but with respect to the Anchor and Cables, and Rigging, it is of the utmost importance they should be sent. Two carts put together would easily effect this, let the expense be ever so great; but care should be taken to prevent the Cables from chafing, by matting the turns, or putting canvass round the parts liable to rub against the wagon. But I need not give you any hints of this kind. I wish we may have as many of the articles as can be got, and I know you will exert yourself to effect this business.

I am, in behalf of the Marine Committee, Sir, your most ob't serv't,

JOHN HANCOCK, Chairman.

ROBERT MORRIS, Esq.

Member of the Marine Committee.

P. S.—The enclosed letters to Com. Hopkins I leave open for your perusal; please to seal and forward by 1st good op'ty.

GREAT FIRE AT ROCHESTER.

Correspondence of the *Journal of Commerce*—Rochester, Jan. 26.

We were visited this morning with a more calamitous fire than has ever before occurred in this village. About 5 o'clock it broke out in the Market, and before any effective exertions could be made by the firemen, the Market, which was of wood, and the block of wooden buildings extending from the Market on the west, to the Globe Buildings on the east side of the Genesee river, were enveloped in flames. From this block, it entered the Globe Buildings, an immense pile, near 100 feet square, six stories high on the west, and four on the east side, built of stone, which in less than two hours was burnt to the ground. The loss may be safely estimated at from 50 to \$60,000, a large part of which falls on Messrs. Newell & Stebbins, who owned the south half of the Globe Buildings, in which they had a Dry-Goods Store and a Carpet Manufactory. They had no insurance. The other half of the Buildings was owned by R. B. Post of New York, on which I believe there was some insurance. The other occupants of the Globe Buildings, were Edward Roygen, Warehouse for Wool and Skins, loss \$3000. Richard Van Kleeck, Hat Store—property saved. Williams & Merrill, Leather Store—loss \$1000. Jennings & Keeler, Leather Store—loss \$800. Quincey S. Odard, boot and shoe store—and about a dozen others occupying rooms for manufacturing purposes. The wooden block was of little value comparatively. It was occupied by J. O'Donoghue, auctioneer; Charles Smith, Reuben Leonard, E. S. Curtis, and one or two other grocers, and E. W. Collins, dry goods store. But a small part of the property was insured—probably, from what I have learnt, not to exceed \$10,000. The fire originated in a grocery under the market.

[From the *Quebec Gazette*, Jan. 24]

DESTRUCTION OF THE CASTLE OF ST. LEWIS BY FIRE.

This building, the residence of the Governor General of British North America for the last 150 years, and so prominent an object in the view of the city of Quebec from the harbor, as it surmounts the bank of the precipice between the Lower Town and the citadel, has fallen an entire prey to the flames. The fire broke out yesterday about noon, in a room at the south end of the building, in the third story, occupied by Capt. McKinnon, A. D. C.; and though early discovered, and every means taken to arrest its progress, it flew with astonishing rapidity through the upper story, and continued to burn downwards, in spite of all the exertions of the troops and about a dozen fire engines, until this moment. It now presents its hundred openings, all bare chimneys, and its sooty and ruined walls—a couple of engines still struggling to subdue the flames in the south wing.

It was originally built by the French at a time not exactly ascertained, and though somewhat altered in form and improved—particularly in Sir J. Craig's administration, at an expense of about £10,000 to the Province—the walls, we believe all remain, having successively escaped with trifling damage the sieges of 1759 by Wolf, of 1775 by the Americans, and the bombardment of Sir William Phipps in 1690. Its site, since the earliest discovery of the country, had been successively the headquarters of the whole French possessions, at one time extending over the present British North American possessions, including Louisiana and the Territories on the Mississippi; and between 1759 and the American Independence in 1778, was the seat of the principal command of the whole continent of North America.

It was tenanted, when the fire broke out by lieutenant Lord Aylmer, governor-in-chief, and Lady Aylmer; capt. McKinnon, Grenadier Guards, and capt. Devie, 24th reg't., aides-de-camp, and Lieut. Paynter, extra aide-de-camp; with the different domestics of the establishment. The military secretary (capt. Airay) occupied apartments in what is called the Old Chateau, a building erected by the English after the conquest, and chiefly used as dancing and dining halls. The public documents belonging to the Administration were early removed, as was the plate, and by much the greater part of the furniture, but the latter was damaged. His Excellency had £3,000 insured on the furniture, (which is purchased from the preceding Governor on every change) at the Quebec Office.

The thermometer on the morning of the fire had marked 221 below zero, and, during the whole time it lasted continued from 2 to 8° below zero, with a strong piercing wind from west to south-west. Many of the engines were soon frozen up, and the hose, and every thing connected with them, could only be

kept in any thing like order by the use of warm water, which was generously furnished from the breweries of Messrs. Racey, McCallum, and Quirouet, and by the religious communities. The citizens and troops distinguished themselves by their services; but from the impossibility of reaching the part of the building overlooking the precipice, it soon became apparent that any successful attempt to arrest the progress of the flames was hopeless.

It will probably cost £25,000 to £30,000 to erect a new building, but the beauty of the situation, and the extent of the grounds will afford an opportunity of erecting one of the most ornamental and prominent public buildings in the city, of which Quebec is really lamentably deficient. The site belongs to the Military Government.

Lord and Lady Aylmer remained for some time yesterday with Colonel and Mrs. Craig, where her Ladyship, we understand, slept last night. Lord Aylmer is at present at the residence of the Hon. Col. Gore, Deputy Quarter Master General to the Forces.

The fire raged with considerable violence during last night, and frequent alarms were given, some fear being felt that the houses in Champlain and Mountain streets, immediately at the foot of the precipice on which the Castle is built, would be set on fire by the embers carried over by the wind, or by the falling and blazing timbers, which descended down the steep declivity on the tops of buildings of into yards. Fortunately, the snow on the houses protected them, and no further accidents have occurred. Had the fire taken place in the summer, there must have been a great destruction of property in the lower town.

[From the *Frederick (Md.) of Saturday, Feb. 1.*]

WAR ON THE CANAL.—The account of the battles on the line of the Canal, published in another column, is said to be a little exaggerated, particularly as to the number of persons killed. Since the reception of these details, we have learned that a kind of guerilla war was carried on until Tuesday last, when a treaty of peace was formally entered into and signed; and are gratified to state, that lettees were received in town yesterday, stating that the different parties had returned to their respective sections, and peaceably gone to work. This, we hope will be the end of this affair. If however, a disposition is manifested to disturb the public peace, means will be at hand, promptly to chastise the offenders. For, in obedience to the requisition of the governor of this State, the President has ordered two companies of U. S. Troops to the line of the Canal, with orders promptly to suppress all violent proceedings. One of the companies from the Fort of McHenry, under the command of Capt. Mackey, fully equipped, with fixed ammunition, magazine, &c. passed through this city, via the Rail Road, on Tuesday. They are a body of fine looking men, and excited much admiration. They arrived at Williamsport yesterday, and will remain as long as their services are deemed necessary.

Nearly thirty of the rioters were apprehended in the vicinity of Berlin and lodged in the jail of this county on Thursday last.

[Correspondence of the *Journal of Commerce*.]

ROYAL GAZETTE OFFICE, BERMUDA, JAN. 3.—The derelict vessel mentioned in the last Gazette as having been found amongst the rocks off the West End of these Islands, and towed into El's Harbor, has since been righted, bailed out and discharged of her cargo, which consisted of pork, flour, sperm candles, brandy, and plank, almost the whole of which is spoiled. Even the pork is very much damaged. The name of the vessel, where from or where bound, has not been ascertained; for there were no papers discovered on board, and the vessel's stern was washed away. But little doubt seems to be entertained that she belonged to the United States of America. The pork bears the brand, "Boston, Oct. 1832." She must have been many months in the state in which she was found, for her deck was almost destroyed by worms. In her cabin the bones of human beings were found, and some wearing apparel having the names "M. Sever" and "C. Sever." The articles taken from her are in safe keeping.

The Boston papers, referring to a similar account received there, identify the vessel as the *Schooner Eliza Ann*, which sailed from Boston on 11th December, 1832, for Guayama, and had never been heard of. She was owned by Mr. James Brown, of that city, and on him the loss falls peculiarly heavy, having two sons on board of her, and Capt. E. his nephew. The cargo of the *Eliza Ann*, we under-

stand, corresponds with the statement, and the clothing undoubtedly belonged to Mr. Joshua Seaver, formerly an officer in the Boston Custom House, who took passage in the Eliza Ann, for the benefit of his health.

[From the Philadelphia Gazette.]

Disasters at Sea.—Extract of a letter from Capt. Curtis, of the packet ship John Wells, dated Cape Henlopen Roads, Jan. 30, 1834.—“I arrived here this morning. I have had one of the hardest passages I ever made, westerly gales all the passage—I was 15 days in the channel. In lat 48 06, lon 27 30, on the 22d Dec. boarded the British ship Asia, from Quebec, bound to London, water logged and a complete wreck. Capt. Stevenson and five of the seamen were drowned when the ship capsized, and Capt. Humbleton of the army. I took off the 1st and 2d officers and 11 seamen, they had been living seven days on a few beans. The men lost every thing when the ship capsized and are quite destitute.—[The Asia cleared at Philadelphia 23d Sept. for Quebec.]

U. S. brig Casket, Delaware Breakwater, Jan. 29.
Sir—I am sorry to inform you that the brig Amantea, took fire, while at anchor in this harbor yesterday. Immediately after discovering the fire I proceeded to the brig, with all hands from this brig, that could be spared, with buckets—on boarding her, found her to be on fire, fore and aft, below decks—finding it would be out of the question to put the fire out, I proceeded to the pilot boat Wm. Price for assistance, got the pilots Messrs. Edwards and Fuller, with some of their barges, went with me on board the brig. Immediately the pilots seeing her situation, thought most advisable to slip her cables, which was done, and run her on the beach, when she burnt down in a short time.

Had it not been for the assistance which this brig rendered, she would no doubt, have gone down, at her anchorage in the harbor. But little of any thing has been saved, the most saved is some sails and rigging—she may be considered nearly a total loss. The wind is now blowing hard from northward, and quite cold.

The brig Benj. Ruggless, and schr. Harriet; also, the pilot boats Wm. Price, and Mary Ann, are in this harbor. Respectfully yours
JNO. BURTON.

Very Distressing.—The Ship Brunette, which arrived at Boston on Saturday, on the 28th Jan., in lat 51 25, lon 68, fell in with schr. Chancellor Ross, from Portland, for Boston, with wood. Took off the Capt. and crew, all of whom were badly frozen; the eldest son of the captain died in an hour after being brought on board the ship, and Capt. Ross died on Saturday morning at 2 o'clock. Two others remain badly frost bitten, one of whom, the youngest son of Captain Ross, it is supposed, cannot recover. The schr. sailed from Portland, 21st and struck on a ledge the same night, received much injury, and was driven to sea nearly full of water. When the crew were taken on board the Brunette, the water was three feet deep on the schooner's cabin floor.

Melancholy Accident.—On Wednesday morning the 15th ult., the steamboat Westchester, while on her passage from Bridgeport to Norwalk, and when within a short distance of the latter harbor, fell in with a boat adrift. Captain Brooks immediately despatched his boat for the purpose of picking it up on reaching which, it was ascertained that a young man dangerously wounded and nearly lifeless was lying in her. It proved to be Mr. Charles White, of Norwalk. He had left Old Well early in the morning on a gunning excursion, and had with him a double barreled gun, which it is supposed he fired once, and in the act of re-loading the empty barrel, the contents of the other were discharged into his right arm near the shoulder. When taken on board, he was unable to speak; but after reaching home he articulated a few words. He died about 4 o'clock in the afternoon. Mr. White was an exemplary and worthy young man, and has left an affectionate wife to whom he had been married but a few months, and a large circle of relatives and friends, to mourn his untimely end. He was a son of Mr. Samuel White.—[Danbury (Ct.) Gazette.]

Boston, Feb. 4.—A check from the General Post Office, for \$7000, upon the Commonwealth Bank of this city, was presented at the counter of the Bank on Saturday, and protested for the want of funds; probably not for want of custom-house, but of Post Office deposits. The great deficiency in the Post Office Department has been a matter of notoriety for some time.—[Traveller.]

Large Organ.—The Organ, recently erected by Mr. Henry Erben in St. Philip's Church, is 26 feet in height, 16 feet in width, and 10 feet in depth. It contains three distinct rows of keys and pedals. The Great Organ contains ten stops, viz. Open Diapason, Stopped Diapason, Principal, Twelfth, Fifteenth, Tierce, Sesquialtra of four ranks, Cornet of five ranks, Flute, Trumpet. The Choir Organ contains five stops, viz. Stopped Diapason, Dulciana, Principal, Flute, Fifteenth. The swell contains seven stops, Open Diapason, Dulciana, Violano, Cornet of three ranks, Trumpet and Hautboy.

The Pedals of two stops. Double Open, Diapason and Open Diapason. The largest wooden pipe is 17 feet long and 16, 14 inches wide; the largest metal pipe is 13 feet long, and 10 inches in diameter, being the largest metal pipe in the United States. Total number, 24 stops, 1483 pipes, cost \$4000. Compass of the keys, from Double G. in the Bass, to Fin Alt. Compass of the Pedals, from double, double C. to one octave above. The case of the Organ is of the Corinthian Order, to correspond with the architecture of the Church, and is of elegant mahogany.

This Organ is the largest instrument of the kind in the Southern States. It combines with its great powers, stops of the most dulcet tones, and has been pronounced by competent musical men in New York and in this city a very superior instrument.—[Charleston Courier.]

[From the Albany Argus.]

NORTH RIVER BANK.—We will give below a statement of the condition of this institution on the 27th ult. as contained in a report made to the Senate on Saturday, verified by the oath of the President and Cashier, pursuant to a resolution of that body. It exhibits the affairs of the bank as being in a sound and prosperous condition.

Ca.	
Real estate, consisting of banking house and property in the Eighth Ward,	\$ 34,106 21
Bills discounted,	903,935 49
“ protested (a part of which will be recovered,)	4,928 78
Notes of city banks,	71,680 82
“ country	11,309 51
Specie,	72,094 34
Due from city banks,	74,612 52
“ foreign	32,917 05
Plates and paper	2,989 35
Expense account,	142 67
	\$1,208,015 74
Da.	
Capital stock paid in,	\$500,800 00
Notes in circulation,	181,514 00
Unpaid dividends,	2,535 75
Profit and loss	42,009 41
Discount received since 1st Jan. inst.,	4,031 44
Due to city banks,	153,827 68
“ foreign	13,790 11
“ insurance companies	7,654 20
“ individuals,	297,243 15
	\$1,208,715 74

Florida Steamboat.—The new boat built in Savannah by Mr. John Gant, has been some time launched. She is intended for the southern trade, and is called the Florida. Her engine has arrived in the brig Lela from New York, and we understand, will be put up with all despatch.

When she commences running, the line of Steam Navigation from Maine to Florida will be complete. A line of stages from Jacksonville, on the St. Johns River, to St. Marks, a distance of only 140 miles, and a steamboat between St. Marks and New Orleans, would render it the grand travelling route from New Orleans to the north. Starting from New Orleans in a steamboat, and disembarking at St. Marks, and taking a stage across to Jacksonville, E. F. the passenger could there embark on board this steamboat, and having arrived at Savannah, he could take his choice of going on in one of our fine packets, or continuing his route by steam to Charleston and thence northward. In this way a traveller could reach New York from New Orleans, with only one hundred and forty miles of land carriage!—We understand that such a connection between Jacksonville and St. Marks, is in contemplation.

The brig Draco, Bangs, at Baston from Cronstadt, reports having sailed, November 12th, from Elsinour, in company with ship Mount Hope for New York, and having passed her ashore on the Lapsand, having drifted on by the current, but supposed she got off next day.

[From the Norfolk Herald of Monday.]

ARRIVAL OF THE U. S. SHIP JOHN ADAMS.—The United States ship John Adams, P. F. Voorhees, Esq. Commander, arrived in Hampton Roads on Friday evening last—officers and crew all well. The John Adams sailed from Gibraltar, 1st November and arrived at Mogadore on the 5th; sailed thence on the 7th, and hove to off Madeira for several hours on the 10th, and sailed for Tenerife, where she arrived on the 16th; sailed thence on the 20th, and arrived at Cape Messurado 10th Dec., where they boarded the American brig Whim; sailed 14th December for Martinique, and arrived there on the 6th January—7th, boarded brig Sarah, 25 days from Bath, (Me.)—arrived 8th, brig Caroline, 13 days from Portland; 9th, schr. Pilot, of New York, 15 days from Newbern, (N. C.)—Sailed from Martinique January 12th—28th, in lat. 37, 06, lon. 71 min. 18, spoke Whale ship Findus, bound to New Bedford, and schr. Ocean, bound to Boston.

The John Adams left at Athens, 13th Sept. U. S. ship United States, Captain Nicholson, with Commodore Patterson, and family on board, bound to Constantinople; and at Port Mahon, 21st Oct. U. S. ship Constellation, Capt. Read, from Marseilles—all well. Spoke off Cape de Gatt, a few days previous to 1st Nov. U. S. ship Delaware, Capt. Ballard, from Gibraltar bound to port Mahon.

A French Corvette had arrived at Messurado, charged with presenting the thanks of its Government, for the hospitality, and kindness of the Colonial Cruiser towards the officers and crew of a French vessel which had been wrecked on the coast near Gorée.

The John Adams came up yesterday morning and anchored off the Naval Hospital, where she fired a salute, which was returned from the Navy Yard.

Passengers in the J. A.—Capt. J. H. Conkling, late of brig Admittance, of New York, sold at Gibraltar; Mr. P. S. Fish, of New York, late Captain's Clerk of Frigate United States, and Mr. Warren, of Boston.

List of officers attached to the United States ship John Adams, 1st Feb. 1834.

PHILIP F. VOORHEES, Esq. Mast. Comdt.
Thomas Pettigree, 1st Lieutenant.
Edmund Byrne, 2d do
Chas. H. McBlair, 3d do
Neal M. Howeson, 4th do
G. R. B. Horner, Surgeon.
Edward T. Dunn, Purser.
James F. Schenck, Act. Sailing Master.
J. Vaughan Smith, Asst. Surgeon.

Midshipmen.—F. V. Dilbergh, W. S. Ringgold, W. L. Hernden, C. Watkins, James Anderson, R. B. Pegram, N. G. Bay, J. H. North, F. E. Barry, B. F. Anderson.

William Waters, Boatswain.
David Taggart, Gunner.
Daniel Bane, Carpenter.
Madison Wheeldon, Sail Maker.
Frederick Farlie, Captain's Clerk.

Arrival of the Hon. Mr. Hamm, from Chili.—The brig Lady Adams, of Baltimore, anchored in Hampton Roads on Saturday evening last, in the remarkably short passage of 70 days from Valparaiso, via Coquimbo. Among the passengers in the L. A., was the Hon. John Hamm, Chargé d'Affaires of the U. States to the Republic of Chili, who came up to this place last evening in the steamboat Hampden, and will leave this morning in the steamboat Pocahontas, for Baltimore, via Annapolis. We have been obligingly favored with the following extract of a letter from a passenger on board the Lady Adams:—

“Mr. Hamm is the bearer of the Treaty of Commerce and Navigation which he concluded with the Chilean Government some time ago, and which was duly ratified by the President and Senate of the United States; but the time limited for the exchange of ratifications at Washington having expired, and sundry amendments having been proposed by the Chilean Congress, it became necessary, as I learn, to enter with the Plenipotentiary of Santiago into an explanatory convention, and to have again the whole matter submitted to the Chilean Congress for their approbation. These preliminary arrangements were all satisfactorily settled in November last, by the ratification of the Treaty, as well as the explanatory Convention, and an envoy was appointed to proceed directly to Washington, for the purpose of exchanging the ratifications, and reside near our Government. Senhor Don Manuel Carvallo, the Chilean Envoy, is also a passenger in the Lady Adams, and will proceed to Washington with Mr. Hamm, for the purpose of laying the whole matter before our Government, he being the bearer of the Treaty and Convention in the Spanish language.

MINT OF THE UNITED STATES.

Philadelphia, 1st Jun., 1834.

Sir: I have the honor to submit a Report on the general transactions of the Mint during the last year.

The coinage effected within that period, amounts to \$3,765,710; comprising \$978,550 in gold coins, \$2,759,000 in silver, \$28,169 in copper, and consisting of 10,307,790 pieces of coin: viz.

Half Eagles,	193,630	ps, making	\$968,150
Quarter Eagles	4,160	" "	10,400
Half Dollars	5,206,000	" "	2,603,000
Quarter do.	126,000	" "	39,000
Dimes	485,000	" "	48,500
Half Dimes	1,370,000	" "	68,500
Cents	2,739,000	" "	27,390
Half Cents	154,000	" "	770

10,870,790 \$3,765,710

Of the amount of gold coined within the past year, about \$85,000 were derived from Mexico, South America, and the West Indies; \$12,000 from Africa; \$368,000 from the Gold Region of the United States, and about \$13,000 from sources not ascertained.

Of the amount of Gold of the United States, above mentioned, about \$104,000 may be stated to have been received from Virginia; \$475,000 from North Carolina; \$660,000 from South Carolina; \$216,000 from Georgia; and about \$700 from Tennessee.

The annexed statement exhibits the quantity of gold received from the several districts of the United States which have thus far produced it in sufficient quantities to be an object of regard, commencing with the year 1824. Previously to that period, gold had been received at the mint only from North Carolina, from which quarter it was first transmitted for coinage in 1804. During the interval, however, from that date to 1823, inclusive, the average amount had not exceeded \$2,500.

Statement of the Amount of Gold produced annually from the Gold Region of the United States, from the year 1834 to 1835 inclusive.

	Virginia.	N. Carolina.	S. Carolina.	Georgia.	Tennessee.	Alabama.	Total.
1824	—	\$5,000	—	—	—	—	\$5,000
1825	—	17,000	—	—	—	—	17,000
1826	—	20,000	—	—	—	—	20,000
1827	—	21,000	—	—	—	—	21,000
1828	—	46,000	—	—	—	—	46,000
1829	\$2,500	134,000	\$3,500	—	—	—	140,000
1830	24,000	204,000	26,000	\$202,000	—	—	456,000
1831	26,000	294,000	22,000	176,000	—	—	528,000
1832	34,000	458,000	43,000	140,000	\$1,000	\$1,000	678,000
1833	104,000	475,000	66,000	216,000	7,000	—	868,000
	\$190,500	\$1,674,000	\$125,500	\$744,000	\$9,000	\$1,000	\$2,751,000

In the report of 1st January, 1833, it was remarked that the quantity of gold of the United States brought to the mint in the year 1832, was regarded, according to estimates entitled to great respect, as not much exceeding one half the quantity produced from the mines within that year; nearly an equal amount, being supposed to have been exported uncoined, or consumed in the arts. Nothing has since occurred to create a doubt of the correctness of

that conjecture. It is altogether probable, that the remark is equally true in regard to the last year, and that the amount of gold derived from the United States, within that period, has exceeded one million and a half of dollars. This sum, it is believed, is not less than about one fifth of the amount of gold produced within the same period, from all other sources, in Europe and America, estimated according to the best authorities.

I have the honor to be, with great respect,
your obedient servant,

SAMUEL MOORE,
Director of the Mint of the United States.
To the PRESIDENT of the United States.

Seamen's Bank for Savings.—The annual report of this institution, located in the city of New-York, was made to the Senate yesterday, showing the following result of the transactions of the year 1833, and the state of its funds :

Am't of deposits rec'd from 569 dep.	\$74,288 74
" Interest	4 255 16
" Stock redeemed	7,200 03
" in treasurer's hands at close of 1832	22,367 19

	\$188,111 12
Of this am't there was paid to depositors	\$70,625 61
Invested in U. S. Stock	8,590 99
Expenses	1,040 40
Balance in treasurer's hands	27,857 12

The total amount invested in stocks is \$66,165 28, and the trustees state that since closing the accounts for the year, they have been enabled to credit a rate of 5 per cent. per annum to each account not exceeding \$500, and to each account of larger sums, 4 per cent. per annum.

We understand that orders were yesterday received at the Navy Yard, to fit out the frigate Brandywine for sea *immediately*. It is not known where she is to go, but we presume the intention is to send her out to England with a new Minister, (Mr. Stevenson, probably,) and then to proceed to the Mediterranean station, to relieve the Constitution.—[Gazette.]

Mechanics' Bank of Patterson.—In consequence of the circulation of some unfounded reports abroad, in relation to this institution, added to the pressure of the times, a run has been made upon it for some days past. It has, however, promptly met every demand, and we are satisfied is in a perfectly sound condition; as a corroboration of which, from a source and of a nature that must command confidence, we are enabled to annex the following, from the Governor of the Society for Establishing Useful Manufactures:—[Patterson paper.]

We have about \$90,000 due to us in Patterson, for Lots sold. I will take Mechanics Bank Notes at the rate of ten per cent. premium for said debt—that is, every man indebted to us, who will pay one hundred dollars in Mechanics' Bank Notes of Patterson, within one month, we will credit him on his contract, one hundred and ten dollars. Yours, truly.

ROSWELL L. COLT,
Patterson, January 27, 1834.

RIOTS ON THE OHIO AND CHESAPEAKE CANAL.—The President of the United States, as we learn from the National Intelligencer of yesterday, has, on the resolution of the Legislature of Maryland, calling upon the General Government for aid in suppressing the riots referred to in the annexed article, ordered two companies of United States artillery to proceed forthwith to the scene of disturbance, and report themselves to the civil authority for orders.

RIOTS ON THE LINE OF THE CANAL.—We regret to have to inform our readers that the account of the pacification of the riot among the laborers upon the Chesapeake and Ohio Canal, above and below Williamsport (in Washington county, Md.) turns out to be premature. Since the return of the Hagerstown volunteers, with a number of men under arrest, fresh and fatal hostilities have broken out, in the course of which, as appears by the following account, a number of lives have been lost.—[National Intelligencer.]

WILLIAMSPORT, (Md.) JAN. 18.

Since the foregoing event, great commotion has existed among the hands. Very little work has been done, and a state of alarm and warlike preparation has taken its place. On Thursday last, we are informed, a party of *Corkonians* committed excesses along the line above this place. Yesterday morning a small party were seen approaching this place from above, and were met on the Aqueduct and driven back by an opposing party of their countrymen in the

town. In this affray one man was very seriously beaten and wounded. The citizens of the town, with commendable alacrity, soon put themselves in military order, under arms for the protection of the peace, and remained under arms for the balance of the day and the greater part of the night.

This scene was soon followed by another which resulted in a disastrous battle and several deaths. A party of Fardouns or Longfords, consisting of about three hundred men, headed by intrepid leaders, were announced as approaching from below. Their design they stated to be to pass up the line of the canal to the upper dam, for the purpose of exhibiting their strength, and not to commit a breach of the peace, unless attacked. They were armed in part with guns, but principally with helves, clubs, &c. They passed up quickly over the aqueduct, and on their way, as we learn, three or four hundred more of the same party fell into their ranks. At the upper dam, in a field on the other side of Miedlekauff's, they met the enemy in battle array, drawn up on the top of a hill, about three hundred in number, and armed, in part, with military weapons.

The information we have is, that the attack or at least a challenge to the combat, was made by the latter party. Volleys of shot were exchanged; some men were seen to fall, and the party above begun to fall back and disperse before the superior forces of their enemy. A pursuit ensued through the woods, where frequent firing was heard, and no doubt many lives were taken. *Persons who traversed the field after the battle was over, observed five men in the agonies of death, who had been shot through the head; several dead bodies were seen in the woods, and a number wounded in every direction.* Those who observed the battle describe it as one of great rage and most deadly violence. All the deaths and wounded are reported to have been of the *Coronians*.

About ten o'clock last night the victorious party returned, and passed quietly through this place, after halting a few moments in one of the public streets, to their respective sections and shantees below the town. Quiet was restored for the balance of the night.

We have thus attempted merely a sketch of the horrid barbarities committed in this neighborhood through the past week. The public peace has been outraged, and the civil authorities contemned. It remains for the officers of justice to take the necessary steps to repair these gross violations of the law.

Postscript—Since writing the above, a principal leader of one of the parties has been arrested for examination. The volunteer companies have arrived from Hagerstown, commanded by Col. Wm. H. Fitzhugh, who is also Sheriff of the County, and are now in readiness to aid the civil authority. An express has been dispatched to the Seat of Government for a sufficient regular force, to be sent on and stationed here, or at other suitable points along the line of the Canal, to preserve order among the laborers, and for purposes of general protection. (Banner.)

A Bank Blow-up!—We understand that there has been a blow up of a domestic Bank (not under the Safety Fund) at the village of New London, Oneida County. In other words, one of the most extensive gang of counterfeiters ever discovered in this State, has just been broken up at that place. Sixteen of the counterfeiters have been apprehended. Among this precious lot, we are informed that there is a lawyer, a tavern-keeper, and a constable!—[Albany Evening Journal.]

LOVE ME!

Love me—Love me—like the stars
That love to shine at night,
With sparkling eyes
In joy arise
To kiss the gloom and make it bright.
My heart—My heart is a gloomy veil,
That time has darken'd o'er;
But come with the light
Of thine eyes, star-bright,
And darkness shall be no more.
Love me—Love me—like the sun
That warms while it lightens too ;
Brings flowers to life
With sweetness ripe,
I care not for life without flowers to view.
My heart—My heart's a garden wild,
Its flowers are left to perish ;
But come like the sun,
And smile upon
The heart's garden roses, and cherish.
Love me—Love me—like the moon,
For the moon is chaste and bright ;
And Love to endure,
Must, like moonlight, be pure,
And stainless be in its light.
My heart—My heart's like a placid brook

That lies in a garden fair;
And the sun-rays at noon.
And the stars and the moon,
Must beam on and brighten there.

LOCOMOTIVE ENGINES.

THE AMERICAN STEAM CARRIAGE COMPANY, OF PHILADELPHIA, respectfully inform the public, and especially Railroad and Transportation Companies, that they have become sole proprietors of certain improvements in the construction of Locomotive Engines, and other railway carriages, secured to Col. Stephen H. Long, of the United States Engineers, by letters patent from the United States, and that they are prepared to execute any orders for the construction of Locomotive Engines, Tenders, &c. with which they may be favored, and pledge themselves to a punctual compliance with any engagements they may make in reference to this line of business.

They have already in their possession the requisite apparatus for the construction of three classes of engines, viz. engines weighing four, five, and six tons.

The engines made by them will be warranted to travel at the following rates of speed, viz. a six ton engine at a speed of 15 miles per hour; a five ton engine at a speed of 18 miles per hour; a four ton engine at a speed of 22 1/2 miles per hour. Their performance in other respects will be warranted to equal that of the best English engines of the same class, with respect not only to their efficiency in the conveyance of burthens, but to their durability, and the cheapness and facility of their repairs.

The engines will be adapted to the use of anthracite coal, pine wood, coke, or any other fuel hitherto used in locomotive engines.

The terms shall be quite as favorable, and even more moderate, than those on which engines of the same class can be procured from abroad.

All orders for engines, &c. and other communications in reference to the subject, will be addressed to the subscriber, in the city of Philadelphia, and shall receive prompt attention.

By order of the Company.

WILLIAM NORRIS, Secretary.

December 2d, 1833.

For further information on this subject see No. 49, page 772 of this Journal.

INCOMBUSTIBLE ARCHITECTURE.

INCOMBUSTIBLE dwelling-houses and buildings of all kinds devised or built in New-York, or any part of the United States, as cheap as any other combustible buildings. Actual buildings and houses rendered incombustible at a small additional expense.

SHIPS of all sorts, and Steamboats, rendered incombustible, and not liable to sink, at a small expense.

For sale, 10,000 lbs. of ANTIGNIS, or Incombustible Varnish, at one dollar per lb.

Apply to C. S. RAFFINISQUE, Professor of Hist. and Nat. Sciences, Chemist, Architect, &c. in Philadelphia, No. 59 North 8th street. A pamphlet given gratis.

References in New-York.—Mr. Minor, Editor of the Mechanical Magazine; Messrs. Ruhton & Aspinwall, Druggists. Editors in the city or country, copying this advertisement, will receive a commission on any contract procured by their means.

SI R J M M & F

RAILWAY IRON.

Ninety-five tons of 1 inch by 1/2 inch.	Flat Bars in lengths of 14 to 16 feet counter sunk holes, ends cut at an angle of 45 degrees with splining plates, nails to suit.
300 do. 1 1/2 do. do.	
40 do. 1 do. do.	
300 do. 2 do. do.	
500 do. 2 1/2 do. do.	
soon expected.	

250 do. of Edge Rails of 36 lbs. per yard, with the requisite chairs, keys and pins.

Wrought Iron Rims of 30, 33, and 36 inches diameter for Wheels of Railway Cars, and of 60 inches diameter for Locomotive wheels.

Axes of 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, and 34 inches diameter for Railway Cars and Locomotives of patent iron.

The above will be sold free of duty, to State Governments, and Incorporated Governments, and the Drawback taken in part payment.

A. & G. RALSTON.

9 South Front street, Philadelphia. Models and samples of all the different kinds of Rails, Chairs, Flue, Wedges, Spikes, and Splicing Plates, in use, both in this country and Great Britain, will be exhibited to those disposed to examine them.

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ALBANY SEED STORE AND HORTICULTURAL REPOSITORY.

The subscriber having resumed the charge of the above establishment, is now enabled to furnish traders and others with FRESH GARDEN SEEDS, upon very favorable terms, and of the growth of 1833, warranted of the best quality.

The greatest care and attention has been bestowed upon the growing and saving of Seeds, and none will be sold at this establishment excepting those raised expressly for it, and by experienced seedmen; and those kinds imported which cannot be raised to perfection in this country; these are from the best houses in Europe, and may be relied upon as genuine.

It is earnestly requested whenever there are any failures hereafter, they should be represented to the subscriber; not that it is possible to obviate unfavorable seasons and circumstances, but that satisfaction may be rendered and perfection approximated.

Also—French Lucern, White Dutch Clover, White Mulberry Seed, genuine Mangel Wutzel, Vellow Locust, Ruta Baga, and Field Turnip Seeds, well worth the attention of Farmers.

W. THORBURN,

347 N. Market st. (opposite Post Office.)

Catalogues may be had at the Store; if sent for by mail, will be forwarded gratis. Orders solicited early, as the better justice can be done in the execution.

* Mr. Thorburn is also Agent for the following publications, to wit:—

New York Farmer and American Gardeners' Magazine. MECHANICS' MAGAZINE and Register of Inventions & Improvements.

AMERICAN RAILROAD JOURNAL and Advocate of Internal Improvements; and the New-York AMERICAN, Daily, Tri-Weekly, and Semi-Weekly; either or all of which may be seen and obtained by those who wish them, by calling at 347 North Market street, Albany.

TO RAILROAD COMPANIES.

PROFESSOR RAFFINISQUE, of Philadelphia, will undertake to build CARS that will carry along their own railway, and may be used on level M'Adam roads. They will save ten millions of money to be wasted on 1000 miles of iron rails to be laid in the United States within a few years and dispense with tracks and double tracks. These Cars may be drawn by horses or steam. He claims to have discovered them ever since 1825, by his caveats filed in the Patent Office. Apply, post paid. SI R J M M & F

STEPHENSON,

Builder of a superior style of Passenger Cars for Railroads No. 264 Elizabeth street, near Bleecker street, New-York.

RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part of the New-York and Harlem Railroad, now in operation.

J551f

RAILROAD CAR WHEELS AND BOXES, AND OTHER RAILROAD CASTINGS.

Also, AXLES furnished and fitted to wheels complete at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to. Also, CAR SPRINGS.

Also, Flange Tires turned complete.

J8

ROGERS, KETCHUM & GROSVENOR.

NOVELTY WORKS,

Near Dry Dock, New-York.

THOMAS B. STILLMAN, Manufacturer of Steam Engines, Boilers, Railroad and Mill Work, Lathes, Presses, and other Machinery. Also, Dr. Nott's Patent Tubular Boilers, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited.

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TOWNSEND & DUFFEE, of Palmyra, Manufacturers of Railroad Rope, having removed their establishment to Hudson, under the name of Duffee, May & Co. offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J. B. Jervis, Esq. M. & H. K. R. Co., Albany; or James Archibald, Engineer, Hudson and Delaware Canal and Railroad Company, Carbondale, Luzerne county, Pennsylvania.

Hudson, Columbia county, New-York, January 29, 1833.

SURVEYORS' INSTRUMENTS.

Compasses of various sizes and of superior quality, warranted. Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by E. & G. W. BLUNT, 154 Water street, corner of Maidenlane.

ENGINEERING AND SURVEYING INSTRUMENTS.

The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely new: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy—also, a Railroad Goniometer, with two Telescopes—and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.

WM. J. YOUNG,

Mathematical Instrument Maker, No. 9 Dock street, Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.

Baltimore, 1832.

In reply to thy inquiries respecting the Instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad. I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable.

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sights, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to later angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,

JAMES P. STABLER, Superintendent of Construction of Baltimore and Ohio Railroad.

Philadelphia, February, 1833.

Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors.

E. H. GILL, Civil Engineer.

Germantown, February, 1833.

For a year past I have used Instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these Instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY R. CAMPBELL, Eng. Philad.

German and Norrist. Railroad

AN INTERESTING AND USEFUL MAP.

A friend of ours has now in a state of forwardness, a Map upon which will be delineated nearly all the Railroads now chartered in the U. States. It is designed to show the present contemplated connexion of the different lines, as well as where others may hereafter be constructed to connect with them. It will be completed in a few weeks, and may be had either in sheets, or put up in morocco for pocket maps, in any quantity, by applying to the subscriber. D. K. MINOR, 35 Wall street. New-York, August 14, 1833.

NOTICE TO MANUFACTURERS.

SIMON FAIRMAN, of the village of Lansingburgh, in the county of Rensselaer, and state of New-York, has invented and put in operation a Machine for making Wrought Nails with square points. This machine will make about sixty 6d nails, and about forty 10d nails in a minute, and in the same proportion larger sizes, even to spikes for ships. The nail is hammered and comes from the machine completely heated to redness, that its capacity for being clenched is good and sure. One horse power is sufficient to drive one machine, and may easily be applied where such power for driving machinery is in operation. Said Fairman will make, vend and warrant machines as above, to any persons who may apply for them as soon as they may be made, and on the most reasonable terms. He also desires to sell one half of his patent right for the use of said machines throughout the United States. Any person desiring further information, or to purchase, will please to call at the machine shop of Mr. John Humphrey, in the village of Lansingburgh.—August 16, 1833. A29d R M & F



INSTRUMENTS.

SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

EWING & HEARTTE, at the sign of the Quadrant, No. 53 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude.

For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewin & Heartte.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable. They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES P. STABLER,

Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' Instruments of your Manufacture, particularly Spirit Levels, and Surveyors' Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

WILLIAM HOWARD, U. S. Civil Engineer.

Baltimore, May 1st, 1833.

To Messrs Ewin & Heartte.—As you have asked me to give my opinion of the merits of those instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming acquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprise so well merits, I remain, yours, &c.

B. H. LATROBE,

Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them upon application, to any persons desirous of possessing the same.

At the commencement of the last year I offered to send the American tri-weekly instead of semi-weekly, together with two of my periodicals, in exchange to those who would publish my advertisements of the different periodicals. In consequence of this notice, the exchange list was increased to 165. I soon found that the expense would be greater than I had anticipated, yet I had made the offer, and would of course continue it through the year—as I have done. I however find it too expensive to continue to send as heretofore. The circulation of my PERIODICALS, (upon which the expense falls,) will not warrant it, and I must, therefore, notwithstanding the uniform kindness with which they have been treated by those to whom they have been sent, materially reduce their exchange list.

The semi-weekly American will hereafter be sent in exchange to those who will publish the following advertisements a few weeks for the difference of price. New-York, January 20, 1834.

VOL. III. OF THE RAILROAD JOURNAL AND ADVOCATE OF INTERNAL IMPROVEMENTS is published once a week in quarto form, with 16 pages to each number, at \$3; or in semi-monthly form, of 32 pages, stitched in a cover of colored paper, at \$4 per annum, in advance. The first and second volumes of the Journal may be had in two parts to the year, either stitched in covers or bound in boards, at the subscription price, with price of binding, in one part, 50 cents, in two parts \$1 per volume. Those in covers may be sent by mail to any part of the country, the same as a magazine. Published at No. 35 Wall st., New-York, by D. K. MINOR, Editor and Proprietor.

THE MECHANICS' MAGAZINE AND REGISTER OF INVENTIONS AND IMPROVEMENTS is now just commencing its second year. It will be continued in a manner altogether superior to that of the first year. It has drawn forth many valuable correspondents, in different parts of the country, with the assistance of whom, and those who may hereafter contribute to its columns, together with the ability of Mr. JOHN KNIGHT, formerly, and for several years, proprietor and publisher of the LONDON MECHANICS' MAGAZINE, who is engaged as Editor, the proprietor has no hesitation in saying that it will be found worthy of an extended circulation and a liberal support. The first year, or two first volumes, having been stereotyped, may now be had either in numbers, or bound in boards—either at wholesale or retail. Price \$1 50 per vol. in numbers, or \$1 75 in boards, or \$3 per annum. A liberal discount made to the trade. Published by the proprietor, D. K. MINOR, at No. 35 Wall st. N. Y.

THE NEW-YORK FARMER AND AMERICAN GARDENER'S MAGAZINE, has commenced the second volume of a new series. It is published once a month, in quarto form of 32 pages to each monthly number, at \$3 per annum in advance. The last volume may be had either stitched in a cover, so as to be sent by mail, or in boards. Price, stitched, \$3 25; in boards, \$3 50. Each subscriber who pays in advance, or previous to the first of April, free of postage or commission, will be entitled to eight additional pages to each monthly number, or 96 extra pages to the volume. Published at No. 35 Wall street, N. Y. D. K. MINOR, Proprietor. Jan. 22, 1834.

A QUARTERLY JOURNAL OF AGRICULTURE AND MECHANICS will hereafter be published at the same office. Each quarterly number will contain about 300 large octavo pages, embracing the most choice articles from the best agricultural and mechanical publications both in America and Europe. It will form 2 volumes to the year, of about 640 pages each, and will be put up like other quarterly publications, so as to be sent by mail. Price, \$5 per annum, in advance.

N. B. A small edition only will be published.

D. K. Minor also publishes the NEW-YORK AMERICAN, daily, tri-weekly, and semi-weekly.

Also, the PLOUGH-BOY, a cheap agricultural publication, of eight quarto pages, is issued once a week, at \$1 50 per annum, in advance. It contains much interesting reading upon agriculture, &c.

All Letters and Communications for the above publications, may be addressed, free of postage, to

D. K. MINOR.

TO STEAMBOAT COMPANIES.

PROFESSOR RAFFINESQUE, of Philadelphia, offers his services to render steamboats incombustible, and not liable to sink, even by the bursting of boilers, or striking against snags, sawyers and rocks. This will save many boats, much property, and the lives of hundreds every year. Those who neglect this easy improvement, deserve to be neglected and deserted by the public as unmindful of safety. Apply, post paid, to R. J. M. & F.

ALMANAC FOR THE YEAR 1834.

	Sunday.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.	
Janu'y	5	6	7	8	9	10	11	3d Q. 2 11 17 M New 9 6 14 E 1st Q. 17 9 46 E Full 25 5 17 M 3d Q. 31 8 20 E
Feb'y	2	3	4	5	6	7	8	New 8 0 5 E 1st Q. 16 4 44 E Full 23 4 5 E
March	2	3	4	5	6	7	8	3d Q. 2 7 21 M New 10 6 22 M 1st Q. 18 8 5 M Full 25 1 20 M 3d Q. 31 8 32 E
April	6	7	8	9	10	11	12	New 8 11 46 E 1st Q. 16 7 21 E Full 23 9 42 M 3d Q. 30 11 38 M
May	4	5	6	7	8	9	10	New 8 3 28 E 1st Q. 16 2 59 M Full 22 6 7 E 3d Q. 30 4 0 M
June	8	9	10	11	12	13	14	New 7 5 0 E 1st Q. 14 8 6 M Full 21 3 26 M 3d Q. 28 9 3 E
July	6	7	8	9	10	11	12	New 6 4 17 E 1st Q. 13 0 19 E Full 20 2 22 E 3d Q. 28 2 13 M
August	3	4	5	6	7	8	9	New 5 1 38 M 1st Q. 11 5 17 E Full 19 3 17 M 3d Q. 27 6 52 M
Sept'br	7	8	9	10	11	12	13	New 3 9 53 M 1st Q. 10 0 32 M Full 17 6 24 E 3d Q. 25 10 10 E
Octob'r	5	6	7	8	9	10	11	New 2 6 4 E 1st Q. 9 11 7 M Full 17 11 32 M 3d Q. 25 11 31 M
Nov'br	2	3	4	5	6	7	8	New 1 3 11 M 1st Q. 8 1 35 M Full 16 5 54 M 3d Q. 23 10 38 E New 30 1 51 E
Dec'br	7	8	9	10	11	12	13	1st Q. 7 7 47 E Full 15 11 59 E 3d Q. 23 7 52 M New 30 2 16 M

MOON'S PHASES.

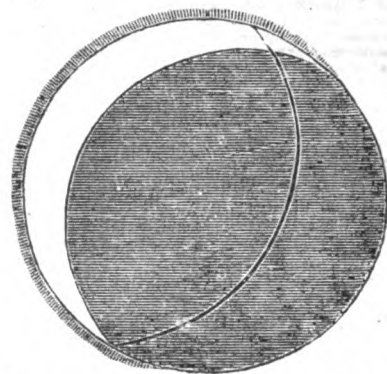
SOLAR AND LUNAR ECLIPSES IN THE YEAR 1834.—First, a small eclipse of the sun, on the 7th day of June, at 5 h. 2 m., invisible at New-York.

Second.—A total eclipse of the moon on the 21st day of June, in the morning, visible at New-York, as follows:

Beginning of the eclipse, at 1 h. 58 m.
Beginning of the total darkness, at 3 h. 1 m.
Middle of the eclipse, at 3 h. 43 m.
Ecliptical conjunction, at 3 h. 46 m.
End of total darkness, at 4 h. 25 m.
End of the eclipse, at 5 h. 28 m.
Digits eclipsed, 17 $\frac{1}{2}$ from the south side of the earth's shadow.

Third.—A large eclipse of the sun on the 30th of November, in the afternoon, visible at New-York, as follows:

Beginning of the eclipse, at 1 h. 6 m.
Greatest obscuration, at 2 h. 29 m.
Apparent conjunction, at 2 h. 30 m.
End of the eclipse, at 3 h. 47 m.
Digits eclipsed, 10° 36' on the southern limb of the sun, as represented in the following figure; the dark curved line represents the moon's centre across the sun from west to east.



The sun will be centrally and totally eclipsed on the meridian in latitude 40° 16' north, and longitude 23° 33' west from New-York.

The sun will be totally eclipsed at Charleston, South Carolina, and at Augusta, in Georgia, and many other places in the states of South Carolina, Georgia, Alabama, Tennessee, and Missouri, &c.

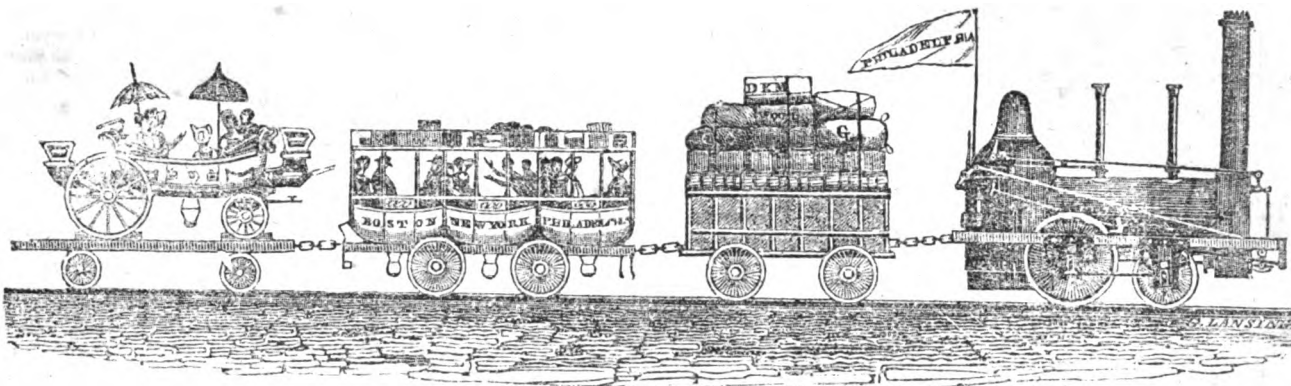
Fourth.—Of the moon, on the 15th day of December, in the evening, visible as follows at New-York:

Beginning of the eclipse, at 11 h. 4 m.
Middle of the eclipse, at 0 h. 20 m.
End of the eclipse, at 1 h. 30 m.
Digits eclipsed, 7° 40' on the moon's southern limb.

List of Subscribers to the Railroad Journal who have paid in advance to Jan. 1, 1835, continued from January 25, 1834.

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AMERICAN RAILROAD JOURNAL, AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT No. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, EDITOR.]

SATURDAY, FEBRUARY 15, 1834.

[VOLUME III.—No. 6.]

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, FEBRUARY 15, 1834.

In this volume of the Journal, we conclude the publication of the report made by the Canal Commissioners upon the survey of the route for a canal from Rochester to Olean Point, on the Allegany river. This report, although occupying much space, will be found well worth an attentive perusal.

NEW METHOD OF APPLYING STEAM POWER.

—Mr. Brown, of Keeseville, has stated that he has invented a plan by which he proposes to dispense altogether with the use of an engine, thereby not only saving the important item of fifteen thousand dollars in the expense, but moreover the cumbrous bulk and ponderous transportation of an engine. He has entire confidence in the perfection and utility of this discovery, having tried the experiment "on a small scale;" and is taking measures to patent his invention, and to demonstrate its capacity early the coming season. Mr. Brown is an ingenious mechanic and worthy citizen of our village. Thus, with Burden's boat, Rutter's process of generating steam, and Brown's application of its power, we may soon expect to ride from Troy to New-York and back in twelve hours, and at an expense less than we could stay at home in "these hard times."—[Keeseville Argus.]

COAL STEAM BOILERS.—The construction of steam boilers of such a form as to admit of the use of anthracite coal for fuel, instead of wood, has long been a desideratum. In the engine and apparatus of the steamboat Novelty, it was first designed to use coal, but from some imperfection or obstacle then yet unsurmounted, in the arrangement and adaptation of the furnace and boilers, that design was abandoned. It is now understood that Dr. Nott has persevered in his experiments for the construction

of a boiler and furnace, in which coal may be used to greater advantage than wood, till success has crowned his efforts. But what the form or fashion of his contrivance is for this purpose, we are not informed.

We see it stated in a New-York paper, that a Mr. Disbrow, already favorably known to the public as an ingenious and enterprising mechanic, has likewise succeeded in constructing a "Lackawanna coal boiler," one of which is in operation on board the steamboat Delaware, and of which an individual who witnessed its operation says, "it accomplishes all the anticipations of the inventor."

Specification of a Patent for a New Manufacture of Wheels for Locomotive Engines and Cars, to run upon Railroads, granted to MATTHIAS W. BALDWIN, city of Philadelphia, June 29, 1833. [From the Journal of the Franklin Institute.]

To all whom it may concern, be it known, that I, Matthias W. Baldwin, of the city of Philadelphia, have invented a new and useful manufacture of wheels for locomotive engines and cars, to run upon railroads, and that the following is a full and exact description of my said invention.

Instead of making the wheels for the carriages of locomotive engines, and of other cars, or carriages, to be used upon railroads, of cast iron, or of a combination of cast and wrought iron, or of wood combined with cast or wrought iron, or with both, as they have been heretofore made, I cast the rims of such wheels, as well as in most instances the spokes and hubs, or naves, in one piece with the rims, of a composition of metal known to workmen under the name of hardened brass, or gun metal. It is not necessary for me to designate the proportions in which the respective metals are mixed which form the hardened brass or gun metal, as these will vary with the degree of hardness desired in the rim, or tread, of the wheel, in a manner well known to those conversant with the casting of brass and its compounds. Where it is desirable to increase the adhesion between the rail and the wheel, it may be found necessary to make the wheel proportionably softer, by decreasing the quantity of tin entering into the composition of them, or even to cast them of soft brass or of copper entirely.

I do not intend to confine myself to any particular form for the tread of the wheel, or for the spokes and hub; but to modify it in such way as experience may suggest to be the best adapted to the particular carriage or road to which the wheel is to be applied. I intend sometimes also, to cast the rim of the wheel of such metal without spokes, but furnished with

such flanges, lodgments, or projections, as shall enable me to attach thereto, spokes of wood, iron, or other material.

My claim to an exclusive privilege I rest entirely upon a new manufacture of such wheels, by substituting for their rims, or for every part of them, a new material as hereinbefore set forth, the utility of which consists in its being better adapted to the purposes which they are intended to answer in running upon railroads.

MATTHIAS W. BALDWIN.

On Saxton's Improved Method of Propelling Carriages. By A READER. To the Editor of the American Railroad Journal, and Advocate of Internal Improvements.

In your number of 16th November last, you furnished your readers with the specification of a patent obtained in England by Joseph Saxton, for an improved method of propelling carriages. On reading it, I was very much pleased with the result promised, and at the same time rather incredulous, doubting whether the inventor had not deceived himself. I could not see through the principle, but did not think that any argument against the truth. I find I was not singular, for it is stated that "Many able engineers had found a difficulty in comprehending the principle." So, thinking it highly curious, and to put an end to my doubts, I made a small model. It works to admiration, and is the delight of every one who has seen it. It is a beautiful mechanical toy, but I am persuaded can never be used advantageously on so great a scale as railroad transportation would require. I had no intention of troubling you—it is the first time I have done so; but the subject has acquired new interest in my view, by the announcement, in a London paper, of some steps taken towards introducing the principle into practice.

I send inclosed the communication referred to, and I am, sir,
New-York, 3d Feb., 1834.

A READER.

EXPERIMENTAL RAILWAY.—A lecture was given, or rather a conversation was held, yesterday noon, at a temporary building and railway, situate in Park street, near the Gloucester gate, Regent's Park, on the "Economical, rapid, and safe travelling upon railways by means of Mr. Saxton's patent locomotive differential pulley; by which simple invention (the placard states) a horse, walking at the rate of

two or three miles an hour, will be able to propel a carriage at the rate of thirty miles an hour."

It appears that a few civil engineers and gentlemen being desirous of trying this invention, a piece of ground is formed into a railway of a quarter of a mile in extent, for the purpose of trying experiments, and yesterday the introductory lecture was given, and several models exhibited.

A Mr. Hawkins, who officiated, addressed the few gentlemen present, by observing that the railway was not in a sufficient state to try any experiments then, and he hoped no gentleman had come there under that impression; if so, his money should be returned. What he contemplated on the present occasion was to explain the principles on which Mr. Saxton's invention was founded, and to elucidate the same by models. This invention was calculated to propel a carriage at the rate of one mile in two minutes; the railway before them when completed would be a quarter of a mile in length, which distance and back, being half a mile, he anticipated performing in one minute. Ultimately he considered the distance from London to York might be performed in about six hours, and he did not despair of achieving in the same way a journey from the metropolis to Edinburgh in the space of one open day. The present invention was a new application of leverage, and one which was rather difficult to be understood, unless put in operation. Many able engineers had found a difficulty in comprehending the principle; but he would use his best endeavors to make himself clearly understood, and should feel happy in answering any question put to him. It consisted of having ropes, one mile in length, extending along the railway, and by means of Mr. Saxton's differential pulley, it was calculated that, with the power of one horse, a carriage, containing passengers to the weight of about one ton, could be propelled at the rate already stated of thirty miles an hour. It would require one horse to each mile, but whilst the carriage proceeded at the rate of thirty miles, the horse would only perform a distance of 150 yards; at the end of each mile fresh ropes were applied to the carriage, a fresh horse worked the second pulley, and thus it proceeded on the journey, a person being stationed at the end of each mile to effect the change of gearage. By these means, it was asserted, the greatest acclivity might be ascended, and the experimental railway would be so formed as to show its effect in this particular, part of it being on the same scale of declivity as Shooter's Hill, or one foot in ten. He next proceeded to show, by means of diagrams and models, the mode in which the propelling force was acquired by the newly invented pulley, and then proceeded to state that it was not his intention to run heavy carriages on the railway. One ton, he thought, would be quite sufficient, because, when they could send ton after ton at the rate of thirty miles an hour, and without any delay between, carrying great weights was unnecessary. On the present plan of locomotive engines, it was indispensable that they should be formed to carry heavy weights, because the locomotive engine generally weighed ten tons; and that great weight, being in a state of agitation, wore out and damaged the road infinitely more than all the traffic that passed over. It was found also that one locomotive engine required three times as much fuel as a stationary engine of the same power. It was his intention to use horses, because one horse power would be sufficient for his purpose; and it was found that there was no saving in using engines under six-horse power, it being as cheap to keep six horses as to work a six-horse engine. There would, in this way, be a great saving in the expense of the power; there would also be a great saving in the construction of the railway. At present a yard of railway weighs 50 lbs.; his would weigh less than half. At present hills are cut down, and valleys raised, to make a railway; by the proposed plan this would be unnecessary.

Mr. Hawkins, having concluded his lecture, answered several inquiries made of him by gentlemen present, and received their best wishes for his success. In the course of the conversation, he mentioned that the manufacturer who had made the rails for the company was now executing an order from America for 1,000 miles of railway.

THE GENESEE AND ALLEGANY CANAL.

(Continued from page 69.)

Part of the Route from Rochester to Allegany at Olean, through the Valley of Genesee River.

It has been ascertained that the principal objection to this route is the difficulty at Nunda falls, at which place the banks are steep, high and rocky, and run close into the shore. In addition to this, there are three perpendicular falls in the distance of a mile and a half, amounting in the whole to 274 feet. By a reference to the map, it will be seen that the river here makes a very circuitous bend, embracing a narrow neck of land which rises high above its bend.

Having only passed over this neck without measuring the distance, I could not form an adequate idea of its width, but am of opinion it will not vary much from 200 rods in its narrowest place, and that its height will not fall short of 200 feet. To encounter the difficulty at this place, therefore, it was obvious that the expense must be great, and it was hoped that some other could be found more feasible and better suited to the importance of the object.

The appearance of the map indicated two favorable points, to wit, the valley of the Cushequa and Canasara. And several intelligent gentlemen residing in that quarter were of opinion, that by keeping up the river a short distance, and preserving the level along its banks, we might easily wind out of its valley, and rise above the high lands at the heads of these streams.

To effect this, therefore, was the object of my examination. We commenced at a place called Norton's farms, near the middle of the east line of the town of Nunda, in a valley which opens through the country in an eastern and western direction, and is bounded on the south by an extensive range of hills nearly parallel to it, and which appear to be of a uniform height. Here we found the main branch of the Canasara, which heads in the hills several miles to the north, and comes into the valley from that direction, and then winds off towards the east. We commenced our level in reference to this stream, and took a westerly direction along the valley.

No obstruction appearing in our way until we came to the Cushequa. The banks of this stream are high and wide, and should the Canasara route be adopted, it must be crossed by culvert and embankment with a heavy expense. At this place the land begins to ascend.

We soon run up to sixteen feet, and within two and a half miles to fifty-eight feet, when we came to an abrupt ridge two hundred and one feet above our level, which extends quite to the river, and precludes the hope of getting round. The descent from this point to the bed of the river is four hundred two feet, and consequently below our level two hundred and one feet. To surmount this, allowing the descent in the river to be eight feet in a mile, (and it will not vary much from it,) it is evident we must go up a little more than twenty-five miles, and as the canal from the Allegany will probably come into the Genesee river at the mouth of Black creek, it is likely it may be difficult to unite the two without some extra expense.

As we did not measure the distance, and do not know any thing of the texture of the soil except from external appearances, our calculation of expense must be uncertain and liable to error. But as it may be desirable to know something on the subject, I submit the following estimate.

The distance of deep cutting from 16 to 58 feet, will be 2 1/2 miles, and the amount of excavation, 1,510,422 cubic yards.

The earth is of a light loam, and a considerable part of it may be excavated for eight cents per cubic yard. But when we take into consideration the depth of cutting, and the distance to which much of the earth must be carried, I am of opinion the average expense will not fall short of 25 cents per cubic yard. This item then amounts to \$377,605 55.

The ridge from whence it begins to rise abruptly to where the level cuts it on the opposite side, is about one hundred rods through, and to make a semi-circular tunnel this distance of thirty-four feet span, which will only give sufficient space for an arched wall 28 feet span and three feet thick, would require the excavation of 27,744 cubic yards. I mention this size because it would be sufficient to admit the pas-

sage of two boats at a time, such as are used on the Erie canal, and any thing less than that would, in my opinion, so incommode the navigation as to more than counterbalance the difference of expense. What the expense of this excavation would be must depend upon the quality of earth through which we must pass. But supposing it to be favorable, as external appearances indicate, it would not fall short of fifty cents per cubic yard, which will amount to \$13,872.

The arch way would contain 14,608 perches. For this work stone can be had within four miles, and in that case the expense may not exceed four dollars a perch, making the sum of \$58,432. As to the expense of making the canal along the bank of the river I think we could not reasonably estimate it at less than \$6000 per mile, including grubbing and clearing, and all the contingent expenses. Distance twenty-five miles—\$150,000. Here then we have an aggregate expense of \$599,909 55.

While at Greigsville, we were informed that a connection might be very advantageously formed between Rush Creek and the west branch of the Cushequa, as these streams rise in the same swamp; but upon examination we found the lands so high as to put that route entirely out of the question. It should be here mentioned, that whether the Canasara or Cushequa route is adopted, the difficulties mentioned above must be encountered, as they are common to both. The Cushequa route is shorter by several miles, and may perhaps be preferable on that account.

The Canasara, at Danesville, is a very commodious mill stream; and I know of no place in the western country, (with the exception of Rochester,) so well calculated for hydraulic operations; and should it ever be deemed expedient to form a connection with the Susquehanna river, there is no point perhaps more eligible than that between Arkport and one of the branches of that stream. The distance between the two points is short, and there are no obstructions in the way. I have seen the ground, and speak with confidence.

I was requested by Judge Bouck to make some examinations on the Allegany river, in relation to the improvement of its navigation. It not being convenient for me to attend to it myself, I engaged Mr. Cantine, my assistant at that time, to go down as far as Franklin, and collect such information as he supposed might have a bearing on the subject. The result of his inquiries he has communicated to me in a letter, a copy of which is herewith transmitted.

On his return, he informed me, that the distance from Warren to Franklin was sixty miles, and the descent of the river between the two places, was 189 feet. That the west bank, particularly, was very favorable to the construction of a canal, with the exception of 3 1/8 miles. This distance, though more expensive than the rest, was by no means impracticable. The bottom of the river stony, but generally free from rock. No bluffs or sliding banks the whole distance. Materials of every description necessary for the construction of the work were very convenient, and in great abundance. He also learned from various respectable sources, that these remarks were generally applicable to the whole distance to Pittsburgh. Such being the facts, the cost per mile of making a canal from Warren to Franklin, exclusive of lockage, may not exceed \$6000. This distance, being sixty miles, the expense amounts to \$360,000

Lockage 189 feet, at \$8⁰⁰ per foot, 14,175

\$374,175

Now allowing the average cost per mile, from Warren to Franklin, to be applicable to the distance from Warren to Pittsburgh, we shall perceive that as the one is \$6,240, nearly, and the other two hundred miles nearly, that the whole expense of that distance will amount to \$1,248,000. And we also perceive, that allowing these and the calculations made for the second route, as communicated in this report, to be true, that the whole expense of making a canal navigation from Buffalo to Pittsburgh will not be equal to \$2,000,000.

Now if the State of Pennsylvania will but bring forth her science and resources to this mighty enterprise, she may, in conjunction with the State of New-York, effect a work which, for its importance in a commercial, agricultural, and national point of view, cannot be equalled by any other similar undertaking in the Union.

The above is respectfully submitted by
CHARLES T. WHITFO.

Murray, January 28, 1826.

(Copy of Mr. Cantine's Letter.)

Dear Sir: Agreeably to your directions, I proceeded down the Allegany from Warren to Franklin, in Penn.

sylvania. I left the former place on the 8th day of October last, accompanied by a gentleman selected by the citizens of Warren as a man the most capable of giving correct information of the operation of the floods, and of the river generally.

The stream was uncommonly low, which afforded the best opportunity of viewing its bottom. From the best information I could obtain from the citizens of Warren, I was of opinion the west side afforded the greatest facilities, and my examinations were therefore principally confined to that side. My examinations may be classed under three heads. First, the descent in the river, by estimating the fall in the river by the different ripples, by comparing them with the two we had ascertained with the instrument. Second, to ascertain if the stream could be improved by damming, and locking, and canalling from one dam to another. Third, canalling on the west side, to be supplied with water from the river or the streams that fall into it.

1st. Estimating the descent, I judge it to be one hundred and sixty feet; but on my return to Warren, on searching the prothonotary's office, I found by comparing our levels with a report made by commissioners appointed by the legislature of Pennsylvania, to survey a route for a canal from lake Erie to the Alleghany river at the mouth of French creek, I found the descent to be one hundred and eighty-nine feet. Those commissioners, in their report, regret that it was not in their power to procure an experienced engineer with proper instruments to investigate the route: it is, however, probable that that report is nearly correct.

2dly. Draining the river, &c. The reason why this mode of improvement was suggested, is, that it was feared the banks of the river would be so steep and difficult as to prevent the construction of a canal. To avoid this difficulty, several dams would be necessary, but it would be impossible to determine their location or number; not knowing the descent in the river from one point to another, and believing as I do, that it would be better to construct a canal on the west side of the river, I shall therefore proceed to the result of my examination on that head.

3dly. Canalling on the west side, &c. The distance from Warren to Franklin is sixty miles. Sixteen miles of this, the side-hill comes down to or near the water's edge, at seventeen different places; which is moderately steep. At almost each of those there are several rods together, where there is a margin sufficiently elevated above the river, and wide enough to admit of a canal.

There are three miles of steep side hill; soil the whole of this distance of the sandy order, some places loamy with some detached masses of rock. The river along this distance not to exceed ten feet deep at any one place where it would be necessary to construct works for a defence to the canal, and the greater part of the distance less than three feet deep.

The bottom of the river, the whole distance, was stony, and all the information I could obtain from the old settlers, as to the changes of its channel and banks, agreed that they were few and gradual, and the uniformity of the descent, the appearance of its banks, the great width of the stream, and its appearance generally, unite to show the information correct. There is not a bluff or sliding bank on the whole shore. A covering or lining of stone on the outer side of the tow-path, sloping at two to one, would be sufficient to protect it from the effects of the river; the stone for this purpose in many places would be obtained in digging the canal, and at other places from the bed of the river.

There are two chains of rock bank in horizontal strata; they will admit of being easily broken up; the bed of the stream at this point is rock, thinly covered with loose stones, which, when I viewed it, was but partially covered with water. There is good earth convenient to this place, to form the canal, and the stone for covering may be taken from the bank or the bed of the stream; the river is of good width here.

The residue of the distance, the canal may be carried through favorable ground at or near the foot of the hill, altogether out of the reach of the floods of the river.

As to a supply of water, on this subject there can be no difficulty. There are a number of streams that fall into the Alleghany on the west side, and their descent is sufficiently rapid when they enter the valley, to be made use of as feeders, and to be crossed conveniently, the largest of which are Broken-straw, Oil and French creeks; there is every material necessary for the construction of the work in the vicinity where it will be used. The most intelligent gentlemen in that quarter united in stating that the river was of the same character from Franklin to Pittsburgh.

I was cordially received by the citizens of Warren and Franklin, and every information in their power afforded. Most respectfully, your obedient servant, ABM. CANTINE.

To C. T. WHIPPO, Esq.

To the Honorable the Board of Canal Commissioners of the State of New-York,

I take the liberty to address the following report:

That the following examinations have been made by your orders, for the purpose of ascertaining the practicability of constructing a canal, and of supplying the same with water, to connect the Erie canal with the Alleghany river, by passing the village of Batavia, and up the valley of the Tonawanda creek, to a summit to be formed between Cattaraugus lake at the northeasterly, and Lime lake at the southwesterly extremity, and thence descending by the valley of the Ischua and Olean creeks, to the Alleghany river at Olean Point.

For which purpose I commenced the 6th October, 1825, at the level of the Alleghany river at Olean Point, at which place it is ten rods wide, and sends forth 12,236 cubic feet of water per minute. From thence an accurate level and measurement of distances was carried up the Olean creek 7 miles and 42 chains, to its junction with Oil and Ischua creeks in the township of Hinsdale, and found the rise to be 37.79 feet between the Alleghany and Oil creek. Oil creek at its junction yields 551 cubic feet of water per minute, in the driest weather. From the mouth of Oil creek, the level and survey were continued up the Ischua through the townships of Franklinville, Farmersville and Yorkshire, to Lime lake, a distance of 27 miles and 66 chains from Olean Point; and the total rise from the Alleghany river to Lime lake is 233.63 feet.

A canal from Olean to Lime lake would pass through a valuable tract of country, well cultivated, and abounding with pine and oak timber of the first quality. The soil is a sandy loam, easily excavated, and the surface is generally very regular on the line of canal. The summit dividing Ischua creek from the south end of Lime lake, is about one mile in length, through a tanrask swamp, and rises on an average six feet above the surface of Lime lake. Suitable stone for locks, &c. can be found along the line at convenient distances.

From Lime lake, (which is the summit,) the summit level was carried in a direction towards Cattaraugus lake, and it is ascertained that Beaver lake is 62 feet, and Peacock lake 53 feet above Lime lake; and both these lakes have several smaller ones connected with them, it is evident their waters can all be brought on the summit level.

Cattaraugus lake was found to be 22 feet above Lime lake, but being on the line of the canal, it must be cut through, and also a dividing ridge at the northerly end of the lake, which rises 15 feet above the level of the lake, and runs out to the level in 25 chains. From Lime lake to the north end of the deep cut, the summit level would be 24 miles, and the ground generally favorable, though in many places sidelying and steep, and all may be called heavy timbered land. The only deep cut unavoidable is through the Cattaraugus lake and the dividing ridge. The cutting through the lake would be 26 feet for half a mile, and through the ridge 41 feet for near one-fourth of a mile. The average cutting for two miles is about 20 feet, and it is to be presumed that rock would be met in those depths.

From the northerly end of this deep cut, the country slopes gently to the north, and the canal would follow the valley of the Tonawanda creek, which would be the principal feeder, and runs through a country of excellent soil and highly cultivated for 30 miles, to Batavia, and thence 20 miles further (having a choice of ground the whole distance) to the Erie canal. The whole distance or length of the Batavia and Olean canal is 101 miles and 66 chains.

The water to supply the summit level of this canal is as follows, viz:

The west branch of Ischua creek to be turned into Lime lake, yields per minute		200 cubic ft.
Lime lake, from a surface of 150 acres, per minute	150	"
Beaver and Fish lakes do.	240	"
acres, per minute	200	"
Peacock & Mud l. Cl'r cr.	250	"
acres, per minute	700	"
Cattaraugus lake	150	"
acres, per minute	150	"

Total, 790 1400

Besides these, would be taken in several small spring brooks; and it should be understood that these calculations were made at the driest part of an unusually dry season. It is the opinion of respectable, observing men, that these same lakes and streams have usually afforded more than double the quantity herein stated, during whole seasons in succession; and that these lakes might be made into reservoirs of more than double their present capacity, by erecting dams across their outlets of moderate height, and comparatively at a trifling expense, which would insure a supply of water on the summit adequate to the demands of extensive commercial operations.

The lockage on the Batavia and Olean canal is as follows:

From Cattaraugus lake northerly to the Erie canal	1,135.84 feet.
From Lime lake southerly to the Alleghany river	233.63 "

Total amt. lockage, rise and fall, 1,369.47 feet.

It is proper here to state the lockage on the Rochester and Olean canal, by the Oil creek summit, viz.:

Total lockage north from Oil creek summit to Erie canal	981 feet
Total lockage south from Oil creek summit to Alleghany river	78.79 "

Total amount of lockage, rise and fall, on this route 1,059.79 "

Difference of lockage between the two routes 309.63 "

The principal feeder for the Oil creek summit from the west is the Ischua creek, which can be taken out for that purpose at the foot of Farwell's mill race, three miles and twenty-four chains above the mouth of Oil creek, viz.: Ischua, at Farwell's mill, feet per minute, 750 Lime lake, and Beaver and Fish lakes, which can be turned into the Ischua, 400

	1150
Oil creek, near the summit, say	150
	1300

Having viewed Oil creek summit as a remarkable depression across the country, and very favorable for a canal, the following examinations were made with a view to that object. The Alleghany river at Olean is 2 chains 50 links wide, and moves at the rate of 100 feet per minute, at an average depth of $\frac{2}{3}$ foot, and sends forward 12,236 cubic feet of water per minute. Its total descent from Olean to Pittsburgh is 650 feet, and the distance 280 miles; and in order to a better knowledge of this fine river, a level was carried up the river 8 miles to Rea's mills near the Pennsylvania line, and in that distance the surface of the river had risen 17 feet. About half a mile below Rea's, the Oswego fork of the Alleghany comes in from the east: this fine stream has a swift current, and sends out 2,500 cubic feet of water per minute. I had hoped that this stream might be brought to the Oil creek summit by extending the summit to the vicinity of Olean; and this I believe to be practicable, provided the Oswego could be taken out a few miles south of the Pennsylvania line. This feeder made navigable would lead into the region of stone coal.

A canal uniting with the Alleghany river by either of the above routes, would accommo-

date a large section of our country, whose surplus products are equal in quantity and quality to those of any portion of the state in proportion to its cultivated land and population, in both which respects it is rapidly increasing. These are primary advantages to a large portion of our citizens, but with the state, other considerations are to be considered; as the great enhancement in the value of the state lands, which are known to abound in lumber of the best quality, and coal mines and other minerals, which are known to abound on the various branches of the Allegany, and the very extensive commerce which would be drawn through this canal, and down the Allegany and the Ohio, and from the countries adjacent.

With all these advantages, this canal would undoubtedly soon become a source of increasing revenue to this state.

All which is very respectfully submitted.

NATHAN S. ROBERTS, Engineer.

Lenox, Madison co. N. Y. }
18th January, 1826. }

NEW STEAMBOAT.—We copy from the "Troy Budget" an account of another invention, which report says will supersede Mr. Burden's. We have sent to the inventor, requesting him to furnish drawings and descriptions of his plans, and hope shortly to be able to lay them before our readers. It consists, we understand, of two boats, and a third may be added—300 feet long, and decked over their whole length. Each boat, in shape and mould very much like the Indian bark canoe, is firmly secured by arches attached to the bottom and passing up through the deck, about 20 feet high in the centre, extending nearly the whole length of the boat. The appearance of the boat is pleasing, and is acknowledged by competent practical scientific judges to be far superior to any thing yet in the shape of a steamboat. Mr. Langdon intends to finish the boat in a superior style, with two cabins of 200 feet each, dispensing with the promenade deck and every thing necessary for its support. On the main deck, the only one required, he also intends to have two horizontal engines, one each end of the shafts, the cranks being placed at right angles. The boiler will be constructed like the one which is in operation at the steam-engine works of Langdon, Grosbeck & Co., West Troy, for burning anthracite coal. The boiler is very economical in its consumption of fuel, and is a rapid generator of steam. Mr. L. is of opinion that one firing will be sufficient to carry his boat from Troy to New-York. We have seen the boiler, and it certainly appears, like the boat, to be superior to every thing of the kind in the country.

The boat is an interesting and ingenious specimen of mechanism—combining great strength and durability with a spacious deck and extensive cabins. Its buoyancy and dimensions, united with the perfect safety attending it, together with the superior accommodations which can be furnished, when put in operation, will bring about a new era in the history of travelling by steam. Mr. L. has secured a patent, and intends to have his boat in readiness for use in the course of the next summer.

Mr. Langdon is not unknown to the public as a worthy and skilful mechanic. He is the inventor of the Horse Ferry Boat, which has come into very general use. We wish him the completest success in his new enterprise.

Prize Medals to be awarded, for Discoveries in Science, by the Royal Society of London.
[From the Journal of the Franklin Institute.]

GENTLEMEN,—I am directed by the American Philosophical Society to communicate to you, for publication, the annexed letter, received at their last stated meeting. The object of the Society is to diffuse the information given in that letter throughout the scientific community in the United States.

Very respectfully, yours,

A. D. BACHE,

One of the Secretaries, Am. Philo. Soc.

Some-st House, Apartments of the Royal Society, London, Aug. 3, 1833.

SIR,—I am honored with the commands of His Royal Highness, the President of the Royal Society, to acquaint you, for the information of the American Philosophical Society, at Philadelphia, that His Majesty, the King, has been pleased to grant two gold medals of the value of £50 each, to be awarded by the Royal Society on the day of their anniversary meeting in each succeeding year, for the most important discoveries in any one principal branch of physical and mathematical knowledge.

His Majesty having graciously expressed a wish, that scientific men of all nations should be invited to afford the aid of their talents and researches, I am accordingly commanded by His Royal Highness the President to announce to you, sir, that the said Royal Medals for 1836 will be awarded in that year: the one for the most important unpublished paper on Astronomy, the other for the most important unpublished paper in Animal Physiology, which may have been communicated to the Royal Society for insertion in their Transactions, after the present date, and prior to the month of June, in the year 1836.

For the present, and the two following years, the Council of the Royal Society, with the approbation of His Majesty the King, have directed the Royal Medals to be awarded for important discoveries or series of investigations published within three years previous to the time of award; and those for the year 1833 have been adjudged, the one to Sir John F. W. Herschel, for his paper on the investigation of the Orbits of Revolving Double Stars, inserted in the fifth volume of the memoirs of the Royal Astronomical Society; the other to Professor Decandolle, for his investigations in Vegetable Physiology, as detailed in his work entitled *Physiologie Vegetale*.

I have the honor to be, Sir, your most obedient servant,
CHARLES CUNIG,
For. Sec. Roy. Soc.

To the Secretary of the American Philo. Soc., Philadel.

APPARATUS FOR OBTAINING FIRE.—A very ingenious apparatus is now exhibiting at the store of Mr. John Bailey, in Union street, for obtaining fire. It consists of two glass cylinders, the outer one of which contains a compound of sulphuric acid and water, and in the inner one, which is without a bottom, is suspended a piece of zinc. The action of the acid upon the zinc creates a gas, which is let out by means of a valve, and in coming in contact with atmospheric air, immediately ignites a piece of platina exposed to it. The apparatus is very neat, and was constructed by a young man in Mr. Bailey's employ, from a description of a similar work in Europe.—[New-Bedford Gazette.]

Amount of produce, &c. shipped at and passed Utica on the Erie Canal during the year 1833.

	Passed.	Shipped.
Domestic spirits,.....gallons	1,609,616	493,169
Boards and scantling,.....feet	40,804,377	114,636
Timber,.....	1,733,255	401
Shingles,.....M.	55,387	4,152
Staves,.....	9,264,523	35,307
Flour,.....barrels	967,813	16,055
Provisions,.....do.	27,919	3,808
Salt,.....do.	62,860	253
Ashes,.....do.	29,508	2,478
Lime,.....do.	15,357	406
Beer,.....do.	586	90
Cider,.....do.	284	11
Wood,.....cords	4,808	
Wheat,.....bushels	1,175,423	37
Coarse Grain,.....do.	302,578	21,060
Bran and Ship Stuffs,.....do.	300,518	14,632
Peas and Beans,.....do.	8,260	266
Clover and grass seed,.....pounds	1,460,628	34,229
Wool,.....do.	1,166,673	323,450
Cheese,.....do.	1,857,944	1,279,908
Butter and Lard,.....do.	4,554,915	1,405,861
Hops,.....do.	443,236	291,927
Fur and peltry,.....do.	268,521	5,723
Gypsum,.....do.	18,750,501	
Stone,.....do.	8,805,039	187,204
Merchandise,.....do.	157,357,547	5,148,195
Furniture,.....do.	7,595,732	589,548
Clay,.....do.	1,821,565	
Coal,.....do.	6,423,090	95,905
Pig Iron,.....do.	1,810,215	12,350

The amount received for tolls, &c. at this office during the past year is \$55,064 32; which exceeds the amount received in 1832 by the sum of \$8,019 54.
Collector's Office, Utica, Dec. 27, 1833.

Ann. Res.	SYNOPSIS OF METEOROLOGICAL TABLES, kept at Rochester, N. Y., for the years 1831, 1832, and 1833.											
	TEMPERATURE.			PRESSURE.			INCHES RAIN.			INCHES SNOW.		
MONTHS.	1831	1832	1833	1831	1832	1833	1831	1832	1833	1831	1832	1833
January..	28.	26.4	31.4	29.45	29.56	29.42	3	9	1.4	15	15	35
February..	23.5	26.	28.	29.70	29.65	29.51	5	4	0.0	33	29	37
March.....	41.8	38.6	35.4	29.39	29.44	29.54	1.3	8	1.8	5	9	37
April.....	47.5	47.4	52.5	29.38	29.45	29.54	3.8	1.5	1.8	2	7	38
May.....	56.7	57.2	62.	29.42	29.51	29.51	2.8	4.8	6.1			38
June.....	71.6	70.3	62.	29.53	29.50	29.42	3.4	1.2	2.6			41
July.....	71.3	74.	70.9	29.49	29.60	29.49	5.4	2	3.8			50
August.....	71.	70.5	68.	29.61	29.60	29.49	1.2	4	2			52
September..	60.9	62.8	63.5	29.50	29.54	29.54	2.4	1.7	1.5			56
October....	51.5	52.6	49.5	29.54	29.50	29.46	4.2	2.3	1.3			55
November..	38.9	41.5	40.4	29.44	29.51	29.48	1.6	2.8				49
December..	19.5	34.5	34.	29.47	29.47	29.50	0.0	2.4	1			50
Ann. Res.	48.3	50.1	49.6	29.49	29.52	29.49	26.9	24.3	22.6			46.9

Coldest and Warmest Days of 1831, '32, & '33.

YEARS.	COLD'ST DAY.	WARM'ST DAY.	MEAN OF EX.
1831.	February 7, 4° below zero	June 3, 9° above ze.	49.5
1832.	January 27, 6° below zero	June 25, 88° above ze.	47
1833.	January 17, 4° above zero	July 21, 91° above ze.	43.5

[GEOFFREY FAIRBANKS.]

NEW-YORK AMERICAN.

FEBRUARY 8-14, 1834.

LITERARY NOTICES.

No. XIV.

DEXTER, (*Washtenaw Co., M. T.*) Dec. 15th.

I have been waiting here since I last wrote in order to join an exploring party of three or four individuals, to go up into Shiawassee county, to examine lands. A heavy snow storm has set in to-day, however, and as it will put an end to the expedition, I shall probably start by myself for the Hologago county to-morrow. The journey to Grand River which I proposed to myself, I shall, from the time it would consume, be compelled now to abandon entirely. I do not regret the time I spent here for I am not far from the centre of the territory; and while I have my head quarters at a good tavern in a well settled place, I can, in a ride of a few miles, plunge at once into the wilderness. It is a pretty dangerous matter, however, for a stranger to go without a guide reconnoitering through a country where every hill, lake and wood, looks so much like its brother, that the ordinary landmarks are of no assistance to the eye. The scenery of Michigan will be far more attractive when cultivation shall give variety to a landscape which, however beautiful it is at present, is somewhat monotonous. After visiting nearly a dozen of the transparent ponds of every size which stud the surface of the country, and finding but two or three whose firm banks of some fifteen or twenty feet elevation, assumed a picturesque appearance, from the irregular manner in which they pushed their beautifully wooded promontories far into the lakes they bounded, I started, the other day, to visit a sheet of water somewhat elevated, about twelve miles off.—My way, after going a mile or two from the village, led through oak openings of rolling land, called "the short hills," which I can best assimilate to a collection of enormous graves—the tombs of cities, if you choose—thrown confusedly together upon a perfectly level surface—where a patch of wild meadow land—a cranberry marsh, or a bog that looked like the desolated bed of a lake, and frequently indeed the shallow lake itself, filled up the intervals. The huge oaks that crowned the summits of these formal mounds were the only objects that relieved the dreariness of the landscape—even they, I thought, while riding alone beneath their branches, that sighed to the December wind, were not the most enlivening objects in the world. I rode thus for miles, without seeing a living thing, except a raven, which, as that description of bird is only found in these parts of the Union where wolves still infest the country, I at once took it for granted was hovering near one of the savage beasts to which he so faithfully plays the Jackall. Wheeling my horse suddenly from the trail toward a thicket of dwarf oaks, where I expected to find the carion deer that attracted these worthies, he shied from the bush, and I was thrown upon the spot. After extricating the foot, by which I was dragged a yard or two, from the stirrup, I sprang up but little hurt and moved as quickly as possible to catch my horse, who, having paused for an instant in a clump of trees near by, turned his head around, like a pointer taken aback with the scent after he has passed a bush, and stood calmly gazing at me. At the first step toward the rascal, however, he moved nearly a rod sideways, and then ducking his head toward the ground, and throwing his heels high in the air, my ungrateful courser, accompanying these motions with every additional mark of disrespect he could summon to his aid, left his master alone in the wilderness. He disappeared behind a hill in a moment. I could not help ejaculating with the Kentuckian whose house and family had been burnt up by the savages while he was cleaning his rifle at a brook hard by—"This is very ridiculous." No time was to be lost however. It was late in the day and I was far from any house; while the occa-

sional flakes of snow, which began to fall from the black lowering sky, threatened a storm which might cover in a moment the only path that could guide me homeward. I sat down at once among the long dry grass, and stripping off my leggings and disembarassing my heels of the now useless spurs, stowed all away in my coat pockets. The coat itself, I rolled up in a bundle around my left arm, and taking my gun, to which I applied a fresh cap, in my right, I strode off in as good a humor as one could summon under such provoking circumstances. I could not help thinking, indeed, how much worse matters might have been had I been thus deserted in one of the broad prairie, thirty miles, perhaps, from any house. As for the loss of my horse, I felt so indignant against the inconsiderate brute, that I confess it did not much trouble me. Thus did I trudge on, growing momentarily in better humor with myself. The scene around was dreary at present, but having had all the wild flowers that grow in Michigan described to me, I exercised my imagination by conceiving the more attractive appearance it must wear in summer. I thought how the brown woods must look when the lofty oaks around were clothed in their deep green foliage. I thought of the various vines and flowers which then fill the broad opening between their stems—of the clumps of cluster roses that here grow wild and cover whole acres—of the crimson daisy and fragrant balm pink, the deep-hued lichnidia, and gorgeous golden rod, which, with jonquils and amaranth, the purple fox-glove, and saffron colored silk weed paint the surface of the soil. I could fancy the glossy leaves of the night shade, with its white blossoms and poisonous berries, the creeping ivy and red columbian clustering at the base of the hills. The snow-white lily of the valley, the lilac-tinted, adder's tongue and straw-colored arrow-head, shooting through the long grass between, while the purple fleur-de-lis bloomed along the wet marshes, and the splendid cardinal flower tossed its scarlet leaves in the breeze that swept the banks above.

I must have practised horticulture in this way for sometime, when on rising a slight eminence in my path, I saw my amiable roan standing quietly looking in the direction whence I was coming, apparently waiting for me. I was completely mollified. I forgave him the little freak and advanced with a light heart to lay my hand upon the bridle. He moved a little, and so did I. He moved a little more and I stood still. I spoke to him, but he continued moving. I coaxed him in a tone that would have melted the heart of one of the marble horses of St. Mark's. He was moved by it only further from me. I whistled to him—I had taught him a day or two before to come to my whistle, when he had obeyed me like a dog—he stopped, and I advanced once more to lay my hand on the saddle, and the scoundrel broke into a trot just as I was about touching him. I brought my piece to my shoulder, and could hardly forbear drawing the trigger upon him as I stood.

The ground now rolled like the waves of a frozen sea, and my nefarious brute, who soon began to stalk leisurely along about a hundred yards ahead of me, would, to carry out the figure, be just topping the combing while I was in the trough, and vice versa—like two children balancing on a plank. It was perfectly insufferable, mile after mile, to see that eternal saddle bobbing up and down a hundred yards ahead of me. Sometimes, indeed, the vexatious wearer would step aside among a cluster of oaks tenip the tender grass which still lingered around their roots, and then as he would arch his neck, and seeming to admire the Indian blanket and flame colored surcingle which, after the gay taste of the west, I had buckled, combining use with ornament, to the back of the ungrateful brute, dash off with a snort into a patch of prairie land, I could not but admire the eye of fire and gracefully-gathering-limbs of the spirited creature. I wished, however, that he was anybody's horse but mine, disporting himself at that rate. Besides he was a Kentucky horse, and what right had he to run thus wild in Michigan. At last at a turning of the path he disappeared behind a hill, and ceasing longer to tantalize, left me comparatively comfortable. I reached the first "clearing" about 20 minutes afterward, and looking along the highway which here commenced, my steed was nowhere to be seen. Tire I awoke with walking and vexation, and parched with thirst, (I had neither eat nor drank since breakfast, and it was now nightfall) I advanced to the only shantee near, and knocked at the door. There was no answer, and I shook it violently. A rush-bottomed chair rattled and a cat, the solitary occupant, sprang out through a broken window. I soon found my way, however, to the dilapidated trunk of a large sycamore tree near, which formed the top of a well, and draw-

ing up a moss-covered bucket I placed my lips to the rusty iron-bound brim and took a draught to which the most delicious of Lynch's chateau were but vile *vin-du-pays* in comparison. I can remember but one drink in my life before to compare with it, and that was from a similar goblet after other lips than mine had hallowed the brim. A few moments after a lad rode into the yard with the object of my pursuit, whose bridle had been broken to pieces in the effort of several men to catch him a mile or two off. I was mounted in a moment, and regained my lodgings in an hour, when I found that the adventure of the day had not impaired my relish for a supper of fresh pike and white-fish just smoking on the table.

The range of hills which traverse the Peninsula longitudinally near here, though never, I believe, more than 200 feet high, are said by some to constitute the most elevated part of Michigan. As they abound in game and consist altogether of oak openings, you can conceive of nothing more animating than to gallop over them on horseback. I was out again among them yesterday; and having a pocket compass with me and a map of the country in my pocket, I ventured to leave the trails that wind among the hollows, and scamper over the hills, as my fancy led me. A large flock of grouse rose almost from beneath my horse's feet as I topped the first slight eminence, and then just as the animal was recovering from the flurry into which the rushing sound of their wings threw him, a tall broad-antlered buck, the largest I ever saw, sprang from a small covert, and bounded through the wide forest glades. Away too I went—the feeling was irresistible—I could see the fellow leaping as if he had wings over the rolling land, and the clear bracing atmosphere had given spirits to my horse, that sent us ahead like one and the same animal. In spite of the deer's prodigious jumps, which were as high as they were long, I had gained decidedly on the chase, when coming to the brow of a steep hill, he dashed down the side, and was far away over another before my less agile horse could descend the first. I saw two more deer, besides several flocks of grouse, during my morning's ride. Singularly enough, this was the only time that I had moved a mile without a gun since I left New York; and it was the only opportunity I have had to use one to advantage. If Der Freyschütz were in this region, I should certainly have let the wild huntsman make his own terms with me for better luck.

To-day, for the first time, I saw the meadows on fire. They are of vast extent, running far into the woods like the friths of a lake; and as the wild grass which they supply in the greatest profusion, furnishes the new settler with all the hay he uses for his stock, they are burnt over thus annually to make it tender. These fires, travelling far over the country, seize upon the large prairies, and consuming every tree in the woods except the hardiest, cause the often-mentioned oak openings, so characteristic of Michigan scenery. It is a beautiful sight to see the fire shooting in every direction over these broad expanses of land, which are kindled at a variety of points. The flame at one moment curls along the ground, and seems to lick up its fuel from below, while at the next it tumbles over like the breakers of the sea upon the dried grass, and sweeps it in a wave of fire from the ground. I found myself repeatedly surrounded by the fire, while riding hither and thither, watching its progress; but was only on two occasions exposed to any inconvenience—once when my horse was bogged to the saddle girths, so that I had to dismount, in a morass, covered with high weeds, to which the flame was approaching, and again when I found myself in a patch of small woodland, which crackled and roared like tophet itself.

As I rode to and fro here, with a young gentleman in company, trying to find a point where, if necessary, we might encounter the flame to less disadvantage, if unable to avoid it altogether, the ridiculous position in which we had placed ourselves, reminded me not a little of that which Andrew Fairservice occupied on the rock, when he trotted hither and thither on his narrow platform, to avoid the bullets of Rob Roy's Caterans. A finer subject for reflection, however, presented itself near the spot. A small brook crossed the meadow, and my companion dismounting, led his horse through, and gained the other side in a moment. But mine, when I rode him rapidly to the brink, and endeavored to jump him, recoiled. I wheeled round, and tried it again; but his recent experience in the treacherous marsh made him fear the sedge brink, and nothing could prevail upon the cautious animal to approach it. At the last attempt, he recoiled so

suddenly with a terrified snort, that I was nearly thrown over his head; and looking for the new cause of anxiety where the stream wound around, so as almost to double itself in front of me, I saw, on the little peninsula of the burning meadow thus formed, an Indian standing with folded arms amid the wreathing smoke, and surveying my motions with an aspect of perfect calmness. He was a middle-aged man, rather tall, and in the full costume of his tribe. The hair on his forehead, which was seamed with several ghastly scars, was nearly white, but three long plaited locks of raven black fell down behind from the crimson handkerchief which bound his brows. He wore a white woollen frock edged with black, with scarlet leggings and moccasins, while armlets of silver and a belt containing his tomahawk and scalping-knife completed his equipments. All these, however, were observed afterwards, when I had given up the attempt to cross the brook, and spurring through the flames where it was lowest, placed myself by the side of the old warrior. But for the present I remained fixed in my seat, gazing on the noble apparition with as much delight as if my own call had evoked it from the ground. I had seen a dozen Indians of all sizes and sexes in the course of the day, not one of whom had awakened the slightest interest; but there was that about the port and bearing of this grim-looking savage, which, with the somewhat theatrical attitude he assumed and the circumstances under which I first beheld him, carried me away completely. He smiled when I approached him, and received me with great kindness of manner; though, as neither of us understood the language of the other, there could be but little interchange of ideas between us. The few Indian expressions of which I am master, were soon expended, and he seemed not to have a word of English to give me in exchange. He made my companion understand, however, that the frightful wounds which disfigure his noble front, were received while fighting on the side of the British against the Americans at Sandusky.

The name of this veteran chief I have since learned to be *Okemaus*, and I find that he is well known and quite respected in the neighborhood.

GRASS LAKE, JACKSON CO. (M. T.) Dec. 16.

The storm of yesterday still prevailed when I left my excellent quarters at the growing little hamlet of Dexter, to find my way toward the country watered by the beautiful *Kalamazoo*. I had been furnished by mine host with a map of the route for the first eight or ten miles, and it would have amused you to see me occasionally stopping in a furious snow storm to balance my pocket compass on the hasty chart thus supplied. I found my way, however, with very little difficulty through a very thick wood, when the thick coat of snow that robed the trees gave a most fantastic appearance to the forest, and about noon I struck the Washtenaw trail to the west. The travelling, however, was anything but agreeable. The snow being soft would "ball," as it is called, beneath my horse's feet, and what with the stumbling and slipping on this account, I have been unable after a day's travel to make more than twenty miles. There was barely light enough left for me to distinguish my way, when I arrived at a comfortable log house belonging to an intelligent and hospitable farmer, a recent emigrant from the western part of the State of New York. The owner of the dwelling was absent, and it was not till after a parley of some minutes between two very pretty women, whom I could distinguish through the window by the light of a tempting-looking fire within, that I gained admittance to pass the night. Once there, however, nothing can exceed the kindness of the family to make the few hours I shall pass with them agreeable.

SPRING ARBOR, DEC. 17.

The snow still continues, and the road, becoming worse and worse, I have made even less progress to-day. But there is something so wild and picturesque in the country through which I am passing, that even such travelling has its pleasures. I have counted more than a dozen lakes on my route, and though some of them are only dreary-looking pools, covering a few acres, in the midst of an extensive moss marsh, yet the short sudden hills which surround others, with the beautiful groves of white oak on their banks, and the natural meadows that open upon their mimic friths, make a most romantic appearance. I came unexpectedly upon a travelling band of Ottawas this morning, in one of the most abrupt of these passes. They were returning home partly equipped with presents from the recent treaty held on the Wabash, and their fluttering blankets, gleaming weapons, and gaudy equipments generally,

would have made them a fine subject for a painter, as a furious squall of snow swept along the side-hill they were descending. We exchanged the customary salutation, "Bojour," (probably from the French *bonjour*), and passed on.

There are several Indian graves immediately before the door of the shantee where I am stopping for the night, which I am told are regularly visited and weeded by the surviving relatives of those here buried. My host has had the good taste to put a fence around them to keep his cattle from the spot—a piece of attention with which the Indians appeared to be much gratified at their last visit; and I may here observe that the settlers of Michigan generally appear to treat this ill-fated race with a degree of kindness and consideration that might well be imitated on other sections of our frontier. This morning I crossed the far-flowing Washtenough (or Grand River) near the new village of Jacksonburg; and the sight of its clear smooth waters inspired a new regret that I must abandon my original intention of following them down to the last trading post.

FORKS OF THE HEKALAMAZOO, {
(Calhoun) Dec. 18.

This never ending storm still continues, and the trails, where not incessantly travelled, being now completely covered and effaced, I lost my way this morning, and wandered several miles from the track. After traversing a broad marsh, however, where my sagacious horse seemed loth enough to venture, I struck a burr-oak opening, and found my way, by the blazed* trees back to the main trail. A man who is used to it, I am told, can get along very well in this way; but you can imagine, that where one has frequently to cross openings of some two or three hundred yards in width, and then hunt up these primitive guide posts, which only occur at long intervals, and have their slice of bark taken out at either side, it is not quite so easy to find his way here, especially with the snow blowing full in his face, as if walking through the rectangular streets of Philadelphia. It took me three hours to gain six miles in this way, my horse slipping and flouncing at almost every step. But lost as I was, I could not help pausing frequently when I struck the first burr-oak opening I had ever seen, to admire its novel beauty. It looked more like a pear orchard than any thing else to which I can assimilate it—the trees being somewhat of the shape and size of full grown pear trees, and standing at regular intervals apart from each other on the firm level soil, as if planted by some gardener. Here, too, I first saw deer in herds; and half frozen and weary as I was, the sight of those spirited looking creatures sweeping in troops through these interminable groves, where my eye could follow them for miles over the smooth snowy plain, actually warmed and invigorated me, and I could hardly refrain from putting the rowels into my tired horse, and launching after the noble game. What a country this is. Into land like this, which is comparatively undervalued by those seeking to settle on the prairie, a man can run his plough without felling a tree, and, planting a hundred acres where he could clear but ten in the unsettled districts of New York, raise his 25 bushels of wheat to an acre in the very first season. "How is the soil here, Sir," said I to a farmer whose broad fields, though but a year under cultivation, looked as if they had been tilled for ten. "A pretty good gravelly loam of 18 inches; but I think some of moving off to Kalamazoo, where they have it four feet deep, and so fat that it will grease your fingers." Railroads and canals will make one broad garden of Michigan, and even now, there is something singularly pleasing to light upon spots in the wildest districts, which, were it not for the rude shantees which indicate their recent settlement—often of but a few months back—might be mistaken for the cultivated farms of an old country. The absence of stumps in the land under cultivation, and the open groves adjacent, give a smiling openness to the landscape which, with the myriads of wild flowers that here deepen the woods in their season, must make the aspect of the country perfectly delightful. I hardly know, though, how some of your city *élégants*, the votaries of Delmonico, or the fair visitants at Gardiner's, would meet the inconveniences of travelling here. As for eating, indeed, they might manage with the aid of cranberry sauce to rough it on venison and wild honey, backed by the finest potatoes and best wheat bread in the world; but I think that when it comes to sleeping, they would be somewhat pained between a bed in the bush and one shared with the hospitable inmates of a cabin, whose dormitory for the whole family is often, as well as their kitchen

* "Blazed" trees are marked with an axe or hatchet, to designate that a trail runs near them.

and parlor, comprised in a single room. Were it not an infraction of the second law of hospitality, I could draw some queer pictures of scenes I have witnessed in this way.

I have now passed the central region where the Eastern and Western rivers of Michigan have their rise, and while I follow down the pebbly waters of the beautiful Kalamazoo to their western outlet, and from thence pass to the mouth of the St. Joseph's, you must not expect the same regularity in my correspondence I have hitherto attempted to preserve. I am well.

MANLY PIETY ON ITS PRINCIPLES, by ROBERT PHILIPS, of Maberly Chapel. New York, JOHN WILEY. A book on religious duties, which, like this, has the merit of being exempt from all cant, and which presents religion in an aspect that is attractive, and with tolerant views, cannot but do good. The manner of the writer is earnest and forcible, and his matter that which concerns all.

SELECT WORKS OF JAMES SHERIDAN KNOWLES, 2 vols. Boston, CARTER, HENDREE & Co., and ALLEN & TICKNOR.—The acting of MacCready, of C. Kean, of Forrest, and above all of Charles Kemble and his tragic daughter, have made the tragedies of Sheridan Knowles familiar to our theatrical public. *Virgilius*, *William Tell*, the *Hunchback*, and *The Wife of Mantua*, are all appreciated here. These, with other of his dramas, and some of his excellent prose tales, together with a brief memoir of his life, make up the contents of these two little volumes, which are quite an agreeable addition to current literature.

THE AMERICAN TURF REGISTER, &c. for February. Baltimore: J. S. SKINNER.—With much of the usual interest in this number for the amusement and information of sportsmen, there is in one of the papers a somewhat higher and more serious tone of philosophizing, if so we may call it, than is usual in discussing the breed of horses and dogs. We give an extract from this paper. It is to rebut the notion that because we have good horses in America, it is not worth while to seek to improve them by importations from abroad.

Change the name and the object, and the truth and justness of these remarks are of general applicability.

But I must notice an argument on account of its commonness—if argument that can be called which is a feeling, and not a reason; an argument which, springing out of our pride and prejudice, makes us put a high estimate on ourselves and our things, and a low estimate on other persons and things, and disdains to acknowledge that the growth of America is inferior to the growth of any foreign clime. Our people have a national conceit,—a public egotism,—which makes us exalt ourselves at the expense of others. Say anything is *American*, and it is stamped at once with a nationality, which confers on it undoubted excellence and indisputable superiority. Hence it is that we hear the performances on the English turf denounced as fables, altogether unworthy of credit. As in higher and more important matters, so in matters of the turf, this wide-spread and rapacious feeling prevents us from imagining any thing superior to the feats of our own horses, and flatly denies that the superior means and facilities of England have produced their natural and correspondent effect. It would be as well to deny the existence of Shakespeare and Sir Walter Scott, because no one amongst us has yet rivalled "the Bard of Avon" and "the Great Unknown." It would be as well to deny the existence of Ruthchild, because we have no banker who can control the operations of the most potent governments. We might as well deny the existence of London, the "modern Babylon," with her million and a half of people; or the magnificent system of English pauperism, which tells of two million recipients of public charity. The fact is, and it cannot be disguised, that England is in advance of us in many respects. She is in advance of us in age and power, and wealth and luxury, and corruption—in philosophy, poetry and eloquence—in manufactures, agriculture and commerce—in her military and marine resources—in her towns and internal improvements—in her public debt and public burdens. She is in advance

of us in the pleasures of life, yet farther than its business: in her theatres and shows—her amusements and sports—her boxing and cock fighting—her dog coursing and horse racing. It is true that we already rival her in many things, and surpass her in some; and as our country gets older and richer, and our citizens enjoy means equal to hers in all respects, there can be no doubt that, whether "for weal or for woe," we can fearlessly stand beside her in every thing. The time will come when the impartial scales of justice will award to us what our national vanity would prematurely snatch, and we can safely challenge a comparison with our mother country in all the employments and pleasures of life, and the consequences incident to them. The time will come when we shall have our poets and our paupers—our wise men and our woolen factories—our towns with a million of people, and our bankers with their millions of money. And, in relation particularly to our subject, we may safely assert, that the time will come when we shall manage things with more system and greater skill—when we shall have a better stock and better racing—when the performances of our horses will justly vie with the boasted feats of the English Eclipse, Highflyer and Priam.

A MONTH LATER FROM ENGLAND.—The ship United States, of the 13th Dec., and the ship Napoleon, of 24th Dec., from Liverpool, both arrived last week, giving us from England accounts one month later than previously received.

The British Parliament, which stood prorogued to the 12th December, was, by royal proclamation of 9th December, still further prorogued till the 4th of February.

The French Chamber of Deputies were to assemble on the 23d December.

The packet ship North America, which sailed hence on the 1st December, arrived out on the 23d.

The U. S. Schooner Shark sailed from Lisbon for Gibraltar Dec. 12th.

The Paris papers state that the Duke of Orleans will set sail for America in March next, and that he intends to pass the greater part of the year in visiting different parts of that country.

BEARHAVEN, Dec. 9.—"The Orpheus, Glover, from Charleston for Liverpool, having been got off the rock, proceeded yesterday, and has put into Bantry Bay."

"The American vessel wrecked at Berck, near Boulogne, the 2d December, is the Dorothea, from New York to Rotterdam. Crew saved."

The most important intelligence, at this moment, to our community, indeed to the whole country, is a considerable and unanticipated improvement in the price of the great staple of Cotton.

Some apprehension existed, we learn, that American Stocks sent to England for sale, might, with the bills drawn against them, be returned by these packets. Nothing of the sort, however, has occurred.

LONDON, Dec. 21.—The Consol-market, after a very long period of stagnation, has experienced an advance to day, to no very material extent. The cause assigned for it is a remarkable one, since it is given out to be the determination of the Bank to lend a sum of £2,000,000 on stock. According to another account, however, this is not to be done with money the property *bona fide* of the Bank of England, but with funds held in deposit belonging to the East India Company, for which corporation the Bank is to act in the affair solely as agent. All the reports agree, however, in stating that such a sum, at present lying idle, is about to be employed for such a purpose. Still the question naturally presents itself, why the bank should become an agent at all in such a manner, and why the same could not be done in a direct way by the East India Company? To the monied interest at large the effect will, perhaps, be the same, since there is as much an increase of the issue of notes in one way as in the other; but it is a very different thing with the public which of the two corporate bodies is to appear in and to have the management of it. The whole sum is said to be engaged on the part of one leading capitalist. These consequences will be felt, if the fact is correct, in every description of stock, and of commodities, too, for such a sum cannot, it is obvious, be brought suddenly into a market already well supplied, without producing a sensible effect. Some say that this is already perceptible, and that a renewal of the demand

for produce is beginning to take place. The speculators are evidently on the alert, and if due precaution is not taken, will repeat the process which took place in the spring, by coming in at the lowest prices, and selling at the highest, leave their dupes to bear the brunt of the reaction sure to follow, and to lament over their losses. In whatever stage of its progress the affair may be, the warning cannot but be salutary.

In political matters the most interesting is that which concerns the growing difficulties between England and France on the one side, and Russia on the other, ostensibly, respecting the navigation of the Black Sea, but in truth, because of the design becoming more and more manifest of Russia to possess herself gradually, but surely, of the magnificent ruins of the Turkish Empire in Europe.

It is said that the partition of Turkey was resolved upon at the late conference at Munchengrätz; that Russia and Austria are to be the active agents in the affair; while Prussia will keep France in check on the Rhine. A correspondent of the Times says—

"The scheme of Joseph II. and Catherine II. as concocted prior to 1790, is about to be realized. The death of Mahmoud is to be the signal; and that event is hourly predicted by his own subjects, who detest him, and who hate the Russians more, in consequence of their having come to support him. It is even affirmed that the treaty of partition was signed between the despoilers at their late meeting in Silesia.

"The period for the great effort on the part of Russia is at hand: alone the prey may escape her grasp; Austria is therefore invited, as in the case of Poland, to take a share. The cautious proceedings so long adopted by the Cabinet of the Kremlin, of moving step by step and securing every position, must soon be abandoned; and Russia and Austria, no longer acting as foes, are resolved with the speed of vultures to devour the spoil. In France, the want is felt of a great military leader who could counteract this project by a bold display of power. England is compelled, for self-defence, to prevent the aggrandizement of Russia by aiding France. One step on the part of any statesman may, on the death of Mahmoud, involve Turkey, and light the blaze of war in Italy and along the line of the Rhine."

It does not appear what authority the writer possesses for these assertions. The facts, however, which he states, and the consequence anticipated from them, are sufficiently plausible.

By an article we copy from the Times, it will be perceived that both France and England are sensibly increasing their naval force afloat, and the only plausible explanation of these preparations seems to be, that of holding in check, or if necessary, acting offensively against, Russia, in the Mediterranean and Black Sea.

England, France, and Russia.—The naval preparations of Russia and France have for some considerable period attracted the notice of political observers in every part of Europe. The French Government has been pushing forward a powerful armament of men of war in her southern dock yards, to be accompanied by 20,000 or 30,000 troops for the purpose, as it is announced, of invading the African province of Constantina, a dependency of the former Government of Algiers. Perhaps a more pressing service might be discovered a few hundred miles to the eastward of that new French colony. Russia has a fleet in the Euxine, within three short days' sail of Constantinople, consisting of not less than from 22 to 24 ships of the line. Can any one be surprised that the Government of Louis Philippe should hasten to be in readiness for all contingencies, or that England should participate in just apprehension of the manifest design of Russia? That England does share the feelings of France on that important subject seems plain from the fact, made known by all the newspapers, that our Admiralty have within these few weeks given orders to fit for immediate service several men of war and first class frigates, now lying in ordinary at Plymouth, Portsmouth, and Chatham, eight sail of the line, we believe and four or five frigates, which, with the Victory and two others already in commission at Plymouth, would constitute a force of 11 sail of the line; and, added to the squadron already in the Archipelago, would compose a fleet of some 16 or 18 sail of the line, including half a dozen three-deckers. Any longer indifference on the part of England to the progress of Russian conspiracy and

trickery against the magnificent ruins of the Turkish empire, would be an insult to the honour of this great people, a sacrifice of the security of British commerce, and of the freedom of the Mediterranean, as well as a crime against the independence and tranquility of the European Continent. We rejoice, therefore to learn from our brother journalists, that signs of increased alacrity to meet, or, in other words, to ward off, the evil which threatens us, are visible in the preparatory measures of his Majesty's Government. If the Cabinet of St. Petersburg shall be satisfied that France and England really "mean what they say," and that they rig out and man a formidable fleet, nor for ostentation, but, if unavoidable, for action, it is our belief that the Czar will turn more than once on his pillow before he dares the encounter of such a confederacy.—[Times.]

[From the Liverpool Standard.]

With respect to the affairs in the East, the ministry of England are unfortunately in this position, viz., they must either consent to surrender their rights of trade and navigation in the Black Sea to the Russians—either be content to be excluded from the Euxine—be content never to pass the Dardanelles except with the approbation of, or bearing a passport from, the Emperor—or they must go to war.

CONSTANTINOPLE, [Nov. 11.—Another fire broke out in the night of the 3d inst. which was soon extinguished, but it affords the melancholy proof that incendiaries are still at work. Letters from Alexandria of the 4th inst. announce that Mehemet Ali has commissioned four banking houses to pay five millions of piastres (500,000 florins conventional money) to the Porte. This is only one year's tribute due from the Pacha of Egypt. It is well known, however, that there is still another year in arrear, as well as the tribute of the newly acquired provinces (20 millions piastres per year) of which two years are due, which Mehemet Ali refuses to pay. It is not known for which of these two accounts the sum now paid is intended; many conjectures are formed on the subject. We have no news from Candia; opposition to the Porte increases in Samos, and the opinion is that it is stirred up by foreign emissaries.

PARIS, Dec. 16.—The following is from the Indicateur of Bordeaux of the 11th instant, received by express. "The entrance of Spanish troops upon the Portuguese Territory, is confirmed by news which has reached us from the head-quarters of General Morillo. This officer would not have set foot thereon but to pursue Don Carlos, who, after two months' hesitation, has considered that his royal dignity required him to appear upon the soil where the rights of Queen Isabella and his own are in conflict. This display of monarchical courage was not of duration. Only 30 men of his suite were able to save themselves; and on the 29th the Prince was at Elvas, where without doubt, he will take rest after his fatigues, but, where either the troops of Don Pedro or those of Isabella will go and dislodge him."

LONDON Dec. 23.—We last night received the Paris Papers of Thursday, together with all those of Friday and of Saturday's date. They are chiefly occupied with speculations and rumours but they add little to our positive knowledge as to the state of affairs in these parts of Europe which chiefly commanded attention at the present moment. As to Russia, the tone of the Journals following in the track of our own is sufficiently warlike, but it is supposed that, whatever may be the issue of the present demonstrations, a better understanding prevails for the moment between the Cabinets of the Tuileries and St. Petersburg. The accounts from Spain relate chiefly to the movements of troops and rumours of various kinds.

It would appear that the Queen's cause is not so triumphant as her partisans would have the world to believe. Valencia is stated to have declared against it, but the same paper (the *Memorial Bordelais* of the 17th) contains a letter from Madrid, announcing the advance of 44 millions by the commercial body to supply the wants of the Government. Nothing, however, of a decisive nature is to be inferred from those conflicting accounts.

Paris itself remained tolerably tranquil. Several of the medical students arrested on Tuesday were still in custody.

From Spain and Portugal we have direct accounts, later than those received by the packets. Details however, are supplied by them, of some interest.

The London Spectator thus speaks of the condition of the internal affairs of both these countries.

The report of the dismissal of M. Cruz, the War Minister at Madrid, is confirmed: but Zea Bermudez still retains his post. M. Zarco del Valle, a

decided Liberal, and friend of the Marquis De las Amrillas, is appointed to the War department *ad interim*; and there seems to be no doubt that the interest of the Liberals in the Queen's councils has lately been much strengthened. Great efforts have been made to procure the removal of Zea Bermudez, by Count Florida Blanca; who has addressed a strong Anti-Ministerial letter to the Queen; but the Minister has hitherto possessed the firm support of M. Rayneval, the French Ambassador; and until that fails him, it is believed his place will be tolerably secure.

Saarsfield has resigned the immediate command of the army to General Valdez, and is appointed Vice Roy of Navarre. It seems that his long, and apparently unaccountable inaction at Burgos, was owing to want of vigor, or perhaps to treachery, in the late Minister of War, Cruz; by whom he was left unsupplied with the necessary reinforcements, and hampered with contradictory orders. The vigorous representations of the Liberals, and the growing dissatisfaction in the capital, at length compelled the Queen to interfere.—Saarsfield sent in his resignation of the command; but first insisted upon putting a virtual end to the war by the capture of Vittoria and Bilbao.

The accounts from Portugal are unsatisfactory to all who wish for a speedy termination of the contest. Don Pedro gains no ground in the interior, and succeeds principally in disgusting his daughter's best friends in the capital. M. Carvalho, his Prime Minister is hated as heartily as his master; but, in his position, what Minister, could be popular for a month together.

Miguel has lately increased his force at Santarem, by recruits; and the arrival of a detachment of 3,000 men from his army, before Oporto, has enabled him once more to assume the offensive. He has dispatched troops into the Alentejo, with the intention it was supposed, of attacking Faro and Lagos in the Algarve.

The latter place had been supplied with provisions and a few soldiers by Napier; who was, however, unable to reach Faro, in consequence of a storm at sea.

MADRID, Dec. 10.—The news of the taking of Morrell is confirmed. According to the rumors of the day, the castle was taken by assault, after an obstinate resistance, in which we lost many officers and men. The insurgents, it is added, were nearly all put to the sword.

LIVERPOOL, Dec. 10.—The principal news from Portugal relates to a mission of Col. Hare to Don Miguel at Santarem. This gentleman is a sort of deputy negotiator on the part of the British Government, and there can be no doubt that he has gone to sound Miguel as to the possibility of putting an end to the wretched war, or rather *raid*, which is wasting the resources of Portugal.

It appears (says the Liverpool Chronicle,) that the offence of Taipa is the publication of a letter to Pedro, in which he denounced the proceedings of the Ecclesiastical Commission for the suppression of Religious Houses. The letter was couched in strong language, and applied the terms "Pope," and "Profane Counsellor" to the President of the Court. This led to his being represented as an agent of Miguel, and a warrant was immediately issued for his apprehension. The Peers are more enraged than ever at the terms of the ministerial reply to their address, and when the Ann Paley sailed, they were met for the purpose of preparing a still more urgent remonstrance.

GALE.—A severe gale was experienced on the coast of England, Nov. 30th, the wind blowing from W. N. W. Several vessels were lost, and many others damaged.

Dreadful Shipwreck.

LIVERPOOL, Dec. 21.—On Sunday last, Messrs. Watson and Pim, the owners of the Lord Blayney sent out a steamboat to examine the banks and shore near which she was lost, and if possible to pick up part of the wreck. Not a single article of any kind could be found, and the steamer returned into port without having gained the least information as to the causes or circumstances of the disaster. The manifest of the vessel has since been received from Newry, and it furnishes more particular information as to the number of passengers, and the amount of

property on board. The number of individuals on board, including those who belong to the vessel was FORTY-SEVEN; the names and descriptions are as follows:—Capt. Stewart, R. N. commander; Stephen Roberts, chief mate; James Smith, second mate; Wm. Darlington, first engineer, (body found); Matthew Stanton, second engineer; Mark Quilleash steward, T. Tobin, cook. The remainder of the hands are not given, as their names are uncertain. The only cabin passenger known to have been on board was Mrs. Robert Purdon, of Newry; only one deck ticket was issued—to Mr. Polin, body found. There was a person named James Gordon, with a man servant on board, and a race-horse called Mounteagle, valued at £300, which was lost. The names of the other passengers, who were dealers in pigs, are as follows:—O'Hear, P. M'Coy, P. Hanlon, P. O'Hear, and another, D. Gorman, H. Dun, James Cassidy, O'Kenry, P. Trainor, O'Rice, J. Duffy, M'Larkins, P. Rice, H. Hughes, Conisky, P. Clarke, J. Quigly, P. Evers, J. Sloan, M'Anulty, P. Dunn, Fennan, Hanlon, W. Sommerville, M'Ardle, (uncertain.)

[From the Baltimore American.]

A letter from Captain VOORHEES, of the United States ship John Adams, dated at Liberia, D. C. 14, and giving a favorable account of the condition of the American Colony, has been published in the National Intelligencer. It is furnished for publication by the Secretary of the Colonization Society, to whom it had been transmitted by Secretary Woodbury as a valuable testimony to the flourishing condition of the settlement. All seemed to be employed—good order and morality prevailing throughout. Several stone warehouses and stone wharves line the banks of the river; others are building, which, with several schooners loading and unloading, or repairing, afford an aspect and an air of business common to a respectable white population. The town is in a thriving condition, and wears an air of neatness and comfort in the dwellings which is quite surprising. Capt. Voorhees adds: "The settlement must move onward, and with all its disadvantages, it appears a miracle that it should be in such a state of advancement."

The vessels at the place, during the last year, were about ninety. An incident is related in the letter, which, while it reflects credit on the humanity and disinterestedness of the colonists, affords a strong corroboration of the importance of the settlement as a place of refuge on the coast for distressed and shipwrecked Europeans. A French oil ship was lately cast away at the coast of Grand Bassa, and the crew, twenty in number, reached that place in distress. They were kindly received by the settlers, and travelled safely along the sea shore to Monrovia. There the colonists with generous hospitality fitted out an expedition, at their own expense, and despatched the government schooner to carry the sailors to their own settlement at Goree. This generosity was the more praiseworthy because the voyage of this vessel on the errand of humanity prevented the Colonists from procuring their requisite supply of rice, and for the want of which they suffered. On the arrival of the John Adams, a French man-of-war barque was in port, which had been despatched by the Governor of Goree to express the gratitude of his countrymen to the people of Liberia for their charitable services.

HOME INTELLIGENCE.

We are requested to state, that the Delaware is again free from ice. The steam boat Burlington, of the Rail Road Line, came up from Philadelphia to Bordertown yesterday, making now an uninterrupted communication between this city and Baltimore, at Summer prices.

SHIPWRECK.—The brig *Anna Margaret*, of and from Charleston, S. C. to Havana, was totally lost on Abaco on the 15th ult. Officers and crew saved.

A VALUABLE DOG, belonging to a gentleman of Gettysburgh, Pa. a few days since, fell into a well which was fifteen feet deep to the water. A rope was thrown to him, which he immediately seized with his mouth, and held on, until he was hoisted to the top in safety.—[Phila. Daily Adv.]

Appointments by the Governor and Senate, February 5, 1834.

New York.—Isaac Adriance, John G. Atterbury, Timothy P. Bruger, John Boyd, William H. Bogardus, Isaac O. Barker, John T. Barten, Horton H. Bur-

lock, Franklin Brown, Abner Benedict, William H. Bulkley, Henry L. Clarke, Philip S. Crooke, James W. Carr, Lebeus Chapman, Anthony Carrol, Washington Cockle, Alfred Colvill, Jacob G. Dyckman, Jary Dunn, Peter De Witt, John Fairlie, Lambert M. Feltus, George W. Giles, Neil Gray, Robert Jiles, jr. William Gracie, Adolphus N. Gouverneur, James Lorimer Graham, Dayton Hobart, Samuel V. Joffman, Philip Hamilton, William P. Hawes, Joseph Hyde, Charles G. Havens, Henry Hutchinson, Robert L. Jaques, Daniel P. Ingraham, Ambrose Kirtland, William Lowerre, Robert C. Ludlow, John M. Lester, James Lozier, Livingston Livingston, William Lee Morris, William H. Maxwell, Jeremiah Miller, jr. Jonathan Miller, Charles B. Moore, Cornelius Nagle, Alanson Nash, Henry N. coll, Jesse J. Jutley, Thomas O'Connor, Richard M. Popham, Ebenezer Palmer, Peter Pinckney, Cornelius Roosa, Daniel Phoenix Riker, Richard A. Reading, Thomas Jefferson Smith, Edward Sanford, Charles W. Sanford, Wm. H. Smith, William S. Sears, David B. Shepard, Reuben Spencer, Alfred A. Smith, Thomas G. Smith, John N. Taylor, Thomas W. Tucker, Thomas Alp Thomas, George N. Titus, Garret G. Van Wagener, James J. M. Valentine, Samuel Van Wyck, Dow D. Williamson, William C. Wetmore, Peter Wilson, Andrew Warner, William G. Wood, Uriah E. Wheeler, Alfred A. Weeks, David E. Wheeler, William D. Waterman, Ebenezer Whiting, Samuel Warford, Isaac Young, and Charles E. Young, commissioners of deeds.

[The above list of commissioners, with those heretofore appointed, completes the number of 100 for the city of New York.]

John Ahern, George F. Allen, Richard M. Blatchford, Robert Bogardus, Frederick W. Burke, John Bulkley, John A. Bogart, George C. Baldwin, Ebenezer Burrill, Thomas S. Brady, David M. Cowdrey, John D. Campbell, Gerardus Clark, Charles A. Clinton, George D. Cooper, Peter A. Cowdrey, Charles T. Cromwell, George Catlin, Thomas W. Clarke, Thomas N. Campbell, William N. Dyckman, Robert Day, William E. Dunscomb, John A. De Russey, John T. Duryce, Walter Edwards, Charles Edwards, Augustus Floyd, Morris Franklin, Henry P. Feltus, John Lorimer Graham, James W. Gerard, Thomas Goin, Andrew S. Garr, Francis Griffin, William G. Haydock, David Higgins, Henry W. Havens, Franklin S. Kinney, Cornelius V. S. Kane, Joseph Leonard, John R. Livingston, jr., Henry Laight, Jacob Morton, John F. Mitchell, Montgomery Moses, Peter S. Marcellis, Jas. W. McKeon, Solomon Melvin, John H. Magher, E. T. Throop Martin, Wm. O'Brien, Charles Oakley, Horatio G. Prall, Adam G. Pentz, Isaac Phillips, Wm. Poole, Samuel A. Porter, Anthony Rappels, Edward Radcliff, Samuel Stansbury, James B. Sheys, Wm. Soul, Thomas Slidell, Edward H. Seeley, Daniel B. Tallmadge, Francis R. Tillou, Wm. N. Titus, William K. Thorn, Edward N. Taylor, Wm. Van Hook, Wm. W. Wagener, John G. Van Buren, Joseph Wallis, Stephen C. Williams, Richard J. Wells, Harman Westervelt, Henry Wilkes, Joseph Woodward, and Caleb S. Woodhull, notaries public.

Thomas J. Shankland, inspector of domestic distilled spirits.

Naval.—The Brandywine frigate, and the sloop of war Falmouth, both at our navy yard, are under sailing orders. Their destinations are not generally known; but conjecture destines one to Europe with a *Plenipo*, and the other to relieve a ship in the Mediterranean. Much depends upon the proceedings of the Senate of the United States, before which body business of importance is pending.—[Gazette.]

CONGRESS—Thursday.—The following business was acted on this week.

Memorials were presented by Mr. Bradsley and Mr. Hard, praying Congress to provide for the construction of a Ship Canal around the Falls of Niagara.

Mr. Galbraith presented a memorial of a Convention of Delegates from Pennsylvania and New York assembled at Warrenton, (Pa.) on the 24th ult. praying Congress to provide for the improvement of the navigation of the Alleghany from Pittsburg to Olean Point—also a petition from inhabitants of Pennsylvania to the same effect—referred to the Committee on Roads and Canals.

Mr. Turrill—a petition for an appropriation for the improvement of the harbor of Sackett's Harbor; and

Mr. Day—from the inhabitants of Cayuga county to improve the navigation at the entrance of Little John's Bay, Lake Ontario—referred to the Committee on Commerce.

Mr. *Slane*, a petition of inhabitants of Buffalo, and of inhabitants of Detroit, for an appropriation for the construction of a harbor at the mouth of Chagrin river, Lake Erie.

Mr. *Lyon* presented a memorial of a general Convention of delegates held at Jonesville, the 6th ultimo, for the purpose of adopting measures preparatory to opening a communication between Lakes Erie and Michigan, by means of a Railroad across the peninsula between those Lakes; praying that a route for said Railroad may be surveyed by United States Engineers; and that Congress will make an appropriation to aid its construction—which were appropriately referred.

Mr. *Hazeltine*—the petition of sundry inhabitants of Chataque, Cattaraugus, and Erie, for an appropriation to be made for the construction of a beacon light at the mouth of Silver Creek harbor, on Lake Erie—which was referred to the committee having charge of the bill for the construction of light houses, &c.

Report of the Committee on Finance on the Removal of the Public Deposites, in the Senate of the U. S., Feb. 5, 1834.

THE Committee on Finance, to whom was referred the report of the Secretary of the Treasury, of 3d of December, 1833, on the removal of the public depositories from the Bank of the United States, and a resolution, submitted to the Senate by an honorable member from Kentucky, declaring that the reasons assigned by the Secretary for the removal of the said depositories, are unsatisfactory and insufficient, have agreed on the following report:

The act incorporating the Bank of the United States, as is justly remarked by the Secretary, is a contract containing stipulations on the part of the Government, and on the part of the corporation, entered into for full and adequate consideration.

The Government became party to this contract by granting the charter, and the stockholders by accepting it. "In consideration," says the charter, "of the exclusive privileges and benefits conferred by this act on the said bank, the president and directors thereof shall pay to the United States, out of the corporate funds thereof, one million and five hundred thousand dollars, in three equal payments;" and in another section, it declares that "during the continuance of this act, and whenever required by the Secretary of the Treasury, the said corporation shall give the necessary facilities for transferring the public funds from place to place, within the United States or the Territories thereof, and for distributing the same in payment of the public creditors, without charging commissions, or claiming allowance on account of difference of exchange; and shall do and perform the several respective duties of the commissioners of loans for the several States, or any one or more of them, whenever required by law."

The section immediately following this provision, is in these words: *And be it further enacted*, That the depositories of the money of the United States, in places in which the said bank and branches thereof may be established, shall be made in said bank or branches, unless the Secretary of the Treasury shall at any time, otherwise order and direct; in which case the Secretary of the Treasury shall immediately lay before Congress, if in session, and if not, immediately after the commencement of the next session, the reasons for such order or direction."

It is not to be denied or rebutted, that this custody of the public depositories was one of the "benefits" conferred on the bank by the charter, in consideration of the money paid, and the services undertaken to be performed

by the bank to the Government; and to this custody the bank has a just right, unless such causes have arisen as may have justified the Secretary in giving an order and direction for changing that custody. Any order or direction, therefore issued under the provisions of this law, necessarily involves a consideration of the just extent of the Secretary's power and of the rights of the bank.

But Congress, in making this provision, unquestionably had in view the safety of the public funds, and certain important financial objects, as well as the making of a just consideration to the bank, for the sum paid, and the services undertaken by it; and with this view, also, it has expressed its will, that the depositories shall continue to be made in the bank, until good cause shall arise for ordering otherwise. Of this good cause, the Secretary of the Treasury, in the first instance, and Congress, ultimately and conclusively, is constituted the judge. Every order, therefore, of the Secretary for changing the depositories presents for the examination of Congress, a question of general political propriety and expediency, as well as a question of right and obligation to the bank.

These questions may be considered together. They are intimately connected; because the right of the bank to retain the depositories, and to enjoy the advantages to be derived therefrom, cannot be denied, unless a case is shown to have arisen within the just power of removal, vested in the Secretary, and which made it his duty to exercise that power. The Secretary is only to remove the depositories for reasons. Of these reasons he is to give an account to Congress; if they be insufficient to justify the removal, the bank has a right to a return of the depositories, and the country has a right also, to expect that, in that case, the public treasure will be restored to its former place of safety.

The Secretary having removed the depositories, and having reported his reasons to both Houses, the whole subject is now before Congress, by way of appeal from his decision; and the question is, whether that decision ought to stand, or ought to be reversed.

The power of the Secretary under the law, is evidently but provisional. It is a power which he may exercise in the first instance, but the propriety of his conduct, in every instance, of its exercise, is ultimately referred to the wisdom of Congress, and by Congress it must be judged. He is authorized to do the act, but Congress is to examine it when done, and to confirm or reverse it. The Secretary may change the depositories, but when changed, Congress is to decide on the causes of such change, with authority either to sanction the removal, or to restore the depositories, according to its own judgment of right and expediency.

In order to decide whether the act of the Secretary ought to be confirmed, it is requisite in the first place, to form a just opinion of the true extent of his power, under the law; and, in the second place, to consider the validity of the reasons which he has specially assigned for the exercise of that power, in the present case.

The opinion of the Secretary is, that his power over the depositories, so far as respects the rights of the bank, is not limited to any particular contingencies, but is absolute and unconditional. If it be absolute and unconditional, so far as respects the rights of the

bank, it must be absolute and unconditional in all other respects; because, it is obvious, if there be any limitation, that limitation is imposed as much for the benefit of the bank as for the security of the country. The bank has contracted for the keeping of the public moneys, and paid for it, as for a privilege or benefit. It has agreed, at the same time, that the Secretary shall possess the power of removal; but then, it is also agreed, that whenever this power is exercised, the reasons therefor shall be reported to Congress; Congress being thus constituted the final judge, as well of the rights of the bank, in this particular, as of the good of the country. So that if the Secretary's power be in truth absolute and unconditional, it restrains Congress from judging whether the public good is injured by the removal, just as much as it restrains it from judging whether the rights of the bank are injured by the removal; because the limitation, if any, is equally for the security of the bank and of the public.

If the bank is interested in retaining the depositories, then it is interested in the truth or falsity, in the sufficiency or unsufficiency, of the reason given for their removal. Especially is it so interested, since these reasons are to be rendered to a tribunal which is to judge over the Secretary, and may form a different opinion on the validity of these reasons, and may reverse his decision. It clearly has an interest in retaining the depositories, and therefore is as clearly concerned in the reasons which the Secretary may give for their removal. And as he is bound to give reasons, this very circumstance shows that his authority is not absolute and unconditional. Because, how can an appeal be given from the decision of an absolute power; and how can such a power be called on to give reasons for any instance of its exercise? If it be absolute, its only reason is a reference to its own will.

The committee think, therefore, that no absolute and unconditional power was conferred on the Secretary; that no authority was given him by which he could deprive the bank of the custody of the public moneys without reason; and that therefore, his opinion is not to be admitted; that in no event can any order for removing the depositories impair the right secured to the bank by the charter. If removed without good cause, the committee think the removal does impair the rights of the bank.

But the opinion of the Secretary as to his own powers, is hardly more limited in respect to the Government and the country, than in regard to the rights of the bank.

His opinion is, that it is his duty, and within his authority, in this view, also to withdraw the depositories of the public money from the bank, whenever such a change would, in any degree, promote the public interest. "The safety of the depositories," he says, "the ability of the bank to meet its engagements, its fidelity in the performance of its obligations, are only a part of the considerations by which his judgment must be guided. The general interest and convenience of the people must regulate his conduct."

By the general interest and convenience of the people, the Secretary can only mean, of course, his own sense of that interest and convenience; because they are not otherwise to be ascertained than by his own judgment.

The Secretary's construction of the law is therefore, that he has power to remove the deposits, whenever, for any reason, he thinks the public good requires it.

In this interpretation of the design and object of the law, and this broad construction of the Secretary's power, the committee cannot concur.

Although the power of the Secretary is not restricted by any express words or terms, nor by any particular occasions for its exercise, specially and expressly designated or prescribed by the law, yet it is not to be admitted, as the committee think, that this power is to be exercised capriciously, or in an arbitrary manner, or for loose or conjectural reasons, or on any idea of an unlimited discretion, vested in the Secretary, to judge on the general question of the public welfare; or, indeed, on any other grounds than those of necessity, or plain and manifest expedience, directly connected with the subject over which the power exists.

The keeping of the public money is not a matter which is left, or was intended to be left at the will of the Secretary, or any other officer of the Government. This public money has a place fixed by law, and settled by contract: and this place is the Bank of the United States. In this place it is to remain, until some event occur requiring its removal. To remove it, therefore, from this place without the occurrence of just cause, is to thwart the end and design of the law, defeat the will of Congress, and violate the contract into which the Government has solemnly entered.

It is fit to be observed, that no other law confers on the Secretary such a wide discretion over the public interests, in regard to any subject, or gives him a power to act on the rights of others, or on the rights of the public, in part of his official duties, with so unlimited an authority as is here asserted. Every where else, he appears in the character of a limited and restricted agent. He is the financial officer of the government; he is the head of the department of the treasury. His duty is, to report annually to Congress the state of the finances, and to communicate to either house, when requested, any information respecting the Treasury; and he is to superintend the collection of the revenue. But he has no authority over the circulating medium of the country, either metallic or paper, nor has he the control of the national currency. It is no part of his duty either to contract or expand the circulation of bank paper, nor in any other way to exercise a general superintendence over the money system of the country. These general interests of the government and the people are not confided to his hands by any of the laws which created his office, and have prescribed his duties—and the committee are of opinion, that the charter of the bank no more intended to give such a wide scope to the Secretary, in regard to the deposits, than other laws intended to give him the same wide scope, in respect to other duties of his office. No intimation of such intention is found, either in the charter itself or in any of the legislative debates which took place in both Houses when the bank was established—or in the discussions which have been had on the various occasions which have been more recently presented for calling forth the sentiment of Congress. In none of these sources, is there to be found any proof that the legislature has delegated, or

intended to delegate, this extraordinary power of judging of the general interest of the people, to the Secretary of the Treasury. Such a power, did he possess it, would necessarily make him the general superintendent of all the proceedings of the bank—because it would enable him to compel the bank to conform all its operations to his pleasure, under penalty of suffering a removal of the public moneys. This would be little less than placing all the substantial power of managing the bank, in his hands. But he is not by law its manager, nor one of its managers—nor has he any right, in any form, to interfere in its management. On the contrary, the very language of the charter rejects all idea of such general supervision over its concerns by him, or any other officer of government. That language is, that "*for the management of the affairs of the corporation*, there shall be twenty-five directors annually chosen;" and, under the restrictions contained in the charter, these directors are entrusted with the whole general business of the bank, subject, of course, to all the provisions of the charter and the by-laws; subject, too, always, to the inspection and examination of either house of Congress; subject always to regular inquiry and trial, and bound always to communicate to the head of the treasury department, on request, statements of its amount of stock, debts due, moneys deposited, notes in circulation, and specie on hand.

Under these restrictions, the establishment of its offices, and the appointment of its officers, the amount of its discounts and every thing respecting those discounts; its purchases and sales of exchange, and all other concerns of the institution, are to be conducted and managed by the directors. There is nothing in the charter, giving the slightest authority to the Secretary to decide, as between the bank on the one hand, and the government or the people on the other, whether the general management of the directors is wise or unwise, or whether in regard to matters not connected with the deposits, it has or has not violated the condition of its charter.—The statement which the bank is bound to make to the Secretary, he may lay before Congress; and he is doubtless bound, by his official duty, to communicate to Congress any other information in his possession, tending, in his judgment, to show that the bank has disregarded its charter, or failed to fulfil all or any of its duties. But here his authority, so far as it regards the general course and operations of the bank, ends. It is then for Congress to act, if it see occasion, and to adopt the regular remedies, for any evils which it may suppose to exist. But it transcends the power of Congress itself to pronounce the charter violated, without hearing, without trial, without judgment, far less is any such power, of pronouncing final judgment confided to the Secretary. His power simply is, that in regard to the deposits of the public money, he is to judge, in the first instance, whether just cause has arisen for their removal.

The Secretary seems to suppose, indeed the very basis of his argument assumes, that the law has confided to him a general guardianship over the public welfare, so far as that welfare is in any way connected with the bank, or liable to be affected by its proceedings; and that he holds the power of the removing the deposits as the means, or instrument by which he is to enforce his own opinions respecting that welfare. The committee do not adopt this

opinion. They think that if such had been the design of the law, its provisions would have been different from those which it does actually contain.

If such general guardianship had been intended to be conferred on the Secretary, it is reasonable to believe that he would have been vested with powers more suitable to such a high trust. If he had been made, or intended to be made, general inspector or superintendent, other authority than merely that of removing the deposits, would have been given him, for this plain reason, that the government and the country have interests of much magnitude connected with the bank, besides the deposits of the public monies in its vaults, and to which interests if endangered, the removal of the deposits would bring no security.

The government is proprietor of seven millions of the stock of the bank, and yet no authority is given to the Secretary to sell this stock under any circumstances whatever, or in any other way to interfere with it.

The bill and notes of the bank, too, are made receivable in all payments to the United States until Congress shall otherwise order: and no power is given to the Secretary to prevent their being so received, either during the session of Congress, or in its recess, however the credit of these bills and notes might become depreciated.

How is it possible to conceive that, if Congress intended to give to the Secretary a general right to judge of the operations and proceedings of the bank, and a power, of course, to declare when it had violated its duty, and was no longer trustworthy, it should yet leave him under an absolute obligation to receive its bills and notes in all payments to the Treasury, though they might have lost all credit, and place no means in his hands to execute his high authority of superintendent, except the mere power of removal.

Wherever it is clear that Congress has given the Secretary a power, it has given him the means of informing his judgment as to the propriety of exercising that power. He has power to remove the deposits, and ample means are afforded him by which he may learn, from time to time, whether those deposits are safe. For this purpose, it is expressly made the duty of the bank to furnish him, so often as he shall require, if not oftener than once a week, with a statement of the amount of the capital stock of the corporation, of the debts due to it, of the moneys deposited in it, of its notes in circulation, and specie on hand, and he has a right to inspect the general accounts, in the books of the bank, relating to this statement. This statement enables him to judge of the solvency and stability of the bank, and of the safety of the public money deposited in it.—Here, then, is a power, and all appropriate means given for the just and enlightened exercise of that power. Confined to the deposits, the power is accompanied with all rational auxiliaries and attendants.

But for the depreciation of the bills of the bank, should that happen, and for other cases of maladministration, Congress has provided just and appropriate remedies, to be applied by itself or others, in exclusion of the Secretary.—For redress of these evils, no power is given to him.

For the security of the public interest, the law reserves a right to either House of Congress, to inquire at all times, into the proceedings of the bank, and if, on such inquiry, it appears in any respect to have violated its charter, Congress may bring it to trial and judgment. Power is given to the President, also, to institute judicial proceedings, if he shall have reason to believe that any such violation has taken place. But no such power is given to the Secretary.

The proposition, then, cannot be maintained, that Congress has relied, for the security of the public interest, and the preservation of the general welfare, so far as it is connected with the

bank, on a general discretion, reposed in the Secretary: for two reasons, first, because it has not given him the appropriate instances: and secondly, because it has, in those instances, either expressly reserved those powers to itself, or expressly conferred them on the President.

If the Secretary cannot prevent the notes of the bank from being received at the custom house, and the land offices, even after they should be discredited; if he have no power to touch, in any way, the seven millions of stock belonging to the Government; if the power of examination into the proceedings of the bank be given, not to him, but to either House of Congress; if he have no power, but Congress and the President, each has power, to direct a legal investigation into the conduct of the bank; how can it possibly be maintained that a general inspection and guardianship over the public welfare, so far as it is connected with the bank, is confided to him, and that his authority to remove the deposits, was given, not to protect the deposits themselves, and secure their proper use, but to enable him to enforce upon the bank, under penalty of their removal, such a course of management, as his sense of the public interest, and the convenience of the people, may require? Such a construction would give the law a strange and an undeserved character. It would convert the power of removal, intended for remedy and redress, into a mere instrument of punishment; and it would authorize the infliction of that punishment without hearing, or trial, in the very cases in which the law yet says, that if violation of duty be charged, the charge shall be heard and tried before judgment is pronounced, and the duty of preferring this charge, and of prosecuting it to judgment, is given, not to the Secretary, but to Congress, and to the President.

The contingent power given to the Secretary to remove the deposits, evidently shows that Congress contemplated the possibility of the happening of some sudden evil, for which, either no other remedy was provided, or none which could be applied with sufficient promptitude; and for which evil removal would be a just and appropriate remedy. The remedy prescribed, then, teaches us the nature of the evils which were apprehended. We can readily understand that threatened danger to the funds was one, and probably the chief of those evils; because change into other hands is the ready and appropriate measure, which would rationally suggest itself to all minds, as the proper security against such danger; and change is the remedy actually prescribed. Neglect to transfer the deposits from one place to another, as the exigencies of Government might require, and thereby to furnish those facilities of exchange, which the charter demands of the bank, without commission and without charge, is another evil for which, should it happen, the remedy would naturally be the withdrawing of the funds, and the placing of them in their former custody, so that they could be transferred or exchanged by the Treasury itself.

But who can see any connexion or relation, such as ordinarily exists between an evil apprehended, and a remedy proposed—between such an evil as a supposed over discount, for instance, by the bank, at one time, or an under discount at another, and the abrupt removal of the deposits? And if no one can see the connexion, how can it be supposed that, in giving the power of removal as a remedy, Congress had in view any such evil?

A question may arise between the Government and the bank, respecting the right of the parties to the sum of one hundred and fifty thousand dollars, as in the case of the French bill.

It is a question on which different opinions may be entertained, and which is, in its nature, fit for judicial decision. Does any man imagine that such a case as this was in the eye of Congress, when they granted the power of withdrawing the whole public treasure from

the Bank? Can it be for one moment maintained, that Congress intended that, in such a case, the Secretary should compel the bank to adopt his own opinion by the exercise of a power, the very exertion of which deranges the currency, interferes with the industry of the people, and, under some circumstances, would hazard the safety of the whole revenue?

The Committee think it cannot admit of rational doubt, that if Congress had intended to give to the Secretary any power whatever, not directly touching the deposits themselves, not only would it have specially pointed out the cases, but it would also, most assuredly, have provided a remedy more suitable for each case. The nature of the remedy, therefore, which is prescribed, clearly shows the evils intended to be provided against.

To admit the Secretary's conduct is subject to no control but his own sense of the general interest and convenience of the people, is to acknowledge the existence, in his hands, of a discretion so broad and unlimited, that its consequences can be no less than to subject, not only all the operations of the bank and its offices, but its powers and capabilities, perhaps its very existence, to his individual will. He is of opinion that the law creating it is in many of its provisions unconstitutional; he may not unnaturally, therefore, esteem it to be his duty to restrain and obstruct to the utmost of his power the operations of those provisions, thus deemed by him to be unconstitutional. He is of opinion that the existence of such a powerful moneyed monopoly, is dangerous to the liberties of the people. It would result from this, that if in the discharge of his official duty, he is to follow no guide but his own sense of the interest of the people, he might feel bound to counteract the operations of this dangerous monopoly, diminish its circulation, curtail its means, and prejudice its credit. To accomplish these very purposes, and these alone, he might withdraw the deposits. The power given him by Congress, would thus be used to defeat the will of Congress in one of its most important acts, by discrediting and otherwise injuriously affecting an institution, which Congress has seen fit to establish, and which it has declared shall continue with all its powers to the expiration of its charter.

The power conferred on the Secretary is a trust power, and like other trust powers, in the absence of express terms, setting forth the occasions for its exercise, it is to be construed according to the subject and object of the trust. As in other cases of the deposit of monies in Banks, the primary object sought to be accomplished by Congress, by that provision of the charter now under consideration, is the safe keeping of the money. The Secretary's trust therefore, primarily and principally, respects this safe keeping. But another object is distinctly disclosed in the charter, which object is intimately connected with the fund, and that is its transfer and exchange from place to place, as the convenience of Government might require. The Secretary's trust, therefore, respects also this other object thus connected with the fund; and when either of these objects requires a removal, a removal becomes a just exercise of his authority. To this extent, none can doubt the existence of his power. If, in truth, the money is believed to be unsafe, if, in truth, the Bank will not grant the facilities which it has promised, in consideration of receiving and holding the fund, then, certainly, it ought to be removed. But here the power must stop or else it is altogether unbounded. Here is a just and reasonable limit, consistent with the character of the power, consistent with the general duties of the Secretary, and consistent with the nature of the remedy provided.

The charter of the Bank is the law; it is the expressed will of the Legislature. That will is, that the Bank shall exist, with all its powers, to the end of its term. That will,

too, as the committee think, is, that the public deposits shall continue in the Bank, so long as they are safe, and so long as the bank fulfils all its duty in regard to them. The Secretary assumes a broader ground. He claims a right to judge of the proceedings of the bank on all subjects. Admitting the fund to be safe, and admitting that the bank has performed all its duties in regard to it, he claims an authority, nevertheless, to remove the deposits whenever he shall form an opinion, founded on the conduct of the Bank, in any particular whatever, and however unconnected with the public monies, that the general interest of the people requires such removal. If, in his opinion, it discounts too little, or discounts too much, if it expands or contracts its circulation too fast, or too slow; if its committees are not properly organized; if it claim damages on protested bills, which it ought not to claim; if, in his opinion, still, it is guilty of a wrong meddling in politics, or if it do any thing else, not consistent with his sense of the public interest; he has a right to visit it with a withdrawal of the public money from its custody.

If this claim of power be admitted, it would seem to the Committee to be a fair result that the Secretary has power to withdraw the deposits, for no other reason than that he differs with Congress upon its constitutional authority to create any bank, or upon the constitutionality of this particular bank, or upon the utility of continuing it in the exercise of its chartered powers and privileges, till its term shall expire.

The committee, therefore, are of opinion, that it was not the intention of the Legislature to give to the Secretary of the Treasury a general guardianship over the public interests in all matters connected with the Bank; but that his power is a limited one, and is confined to the safety, and proper management of that portion of the public interest to which it expressly relates, that is to say, to the public monies in deposit in the Bank.

But the extent of the Secretary's discretion, as asserted by himself, reaches even farther than the wide range which the committee has here described. It is not confined to the protection of all the various interests which the Government of the country have in the bank, or to a supervision and control over all the conduct of the bank, but it embraces all branches of the public interest, and touches every thing which in any way respects the good of the people.—He supposes himself rightfully to possess the power of removing the deposits whenever any causes, springing up in any part of the whole wide field of the general interest, may appear to him to call for such removal. Notwithstanding he may suppose all the great interests confided to the bank to be perfectly safe; notwithstanding he may have no occasion to complain of any part of its conduct; notwithstanding, even, it may so have demeaned itself as to have become the object of his favor and regard; yet, if his construction be admitted, he may remove the deposits simply because he may be of opinion that he might place them, with a prospect of still greater advantage, in other hands. If he be of opinion that the commerce of the country, or its manufactures would be benefited by withdrawing the public money from one bank and placing it in many, that would be an exercise of authority entirely within the limits which he prescribes to himself. It would be a case in which he would only follow his own sense of what the general interests and convenience of the people required. He might think, too, that by withdrawing all the public treasure from the Bank of the United States, and placing it in the hands of twenty or thirty State banks, to remain there during his pleasure, and to be drawn thence, again, at his will, he might be enabled effectually to advance certain other objects, which, whatever others might think of them, he might

consider to be essential to the good of the people. All this, if he be right, is within his just authority. A power, necessarily running to this extent, is a power, in the opinion of the committee, which can never be admitted.

Having thus expressed an opinion upon the general extent of the power claimed by the Secretary, the committee proceed to consider the reasons which he has reported to Congress as the particular grounds on which the power has been exercised in the present case.

The first reason assigned by the Secretary, is the near approach of the period when the bank charter will expire. That period is the 4th of March, 1836, more than two years distant; nearly two years and a half at the time of the removal. Three sessions of Congress, are, in the mean time, to be held; and inasmuch as the Secretary himself says that "the power over the place of the deposits for the public money would seem properly to belong to the legislative department of Government," the committee think it might reasonably have been expected by him, that Congress would not fail to make, in season, suitable regulations on a subject thus admitted to be within the just exercise of its authority, and properly one of its duties.

Why, then, should he not have waited till Congress had seen fit to act upon the subject, or had manifested a disposition not to act?—The matter of the deposits had been before Congress last session, and Congress had then thought no provision to be as yet necessary.—Its undoubted sense was, that the public moneys should remain where they were. This was manifested by proofs too clear to be questioned. Another session was fast approaching, and why was not the whole subject left where Congress had chosen to leave it at the end of its last session, to await the free exercise of its legislative power at this session? It might have been fit for the Executive to call the attention of Congress, at this time, to the necessity of some legal provisions respecting the future custody of the public moneys; and it would doubtless have been proper for Congress, without such call, to take up and consider the subject at its own suggestion; but the committee see no reason whatever, in the approaching expiration of the charter, for a change so sudden, and producing such important effects, made so long before that expiration, at a time when Congress had recently had the subject before it: and when, too, it was again about to assemble, and would naturally have reasonable and full opportunity to adopt any necessary legislative provisions.

The Secretary has stated no reason satisfactory to the Committee, for not deferring this important step until the meeting of Congress. He sets forth no emergency, no sudden occasion, nothing which, in their judgment, made immediate action by him necessary.

The Secretary supposes it to have been his duty to act on the belief that the bank charter would not be renewed; and he refers to recent popular elections in support of this opinion.—The Committee believe it altogether unusual for reasons of that kind to be assigned for public and official acts. On such subjects, opinions may be very various. Different and opposite conclusions may be drawn from the same facts by different persons. One man may think that a candidate has been elected on account of his opposition to the bank; another may see, only, that he has been chosen, notwithstanding such opposition. One may regard the opposition or the support of any measure, by a particular candidate, as having been, itself, a promoting cause of the success of his election; another may esteem it as a formidable objection, overcome, however, by more powerful reasons; and others, again, may be of opinion that it produced little or no effect on the one side or the other. But if inferences, less uncertain, could be drawn from such occurrences, the committee still think, that for a public officer to presume what

law the Legislature will or will not pass respecting matters of finance, from the election of a particular person to be Chief Magistrate, implies a consequence from such election which the constitutional independence and dignity of the Legislature do not allow to be admitted.

But if for this, or other reasons, the Secretary had persuaded himself that the charter of the bank would not be renewed, still, it certainly did not follow that the deposits ought to be removed before Congress had decided on the hands into which they should be transferred, and had made suitable regulation respecting their future custody. If there were good ground for thinking that Congress would not re-charter the bank, for that very reason there was equally good ground for supposing that it would make proper and suitable provision for the keeping of the public monies elsewhere. How could the Secretary doubt that Congress would omit to do that which he avers to be one of its appropriate duties? The question is, not what measures Congress might be expected to adopt—whether the re-chartering of the bank, or what other measures; but whether it ought not to have been presumed that it would adopt some measure, and that a seasonable and proper one, according to its power and its duties; and whether, therefore, this anticipation of the action of Congress, on the eve of its session, is to be justified.

The bank charter declares that the deposits of the public money shall be made in the bank and its offices, and that the bank shall continue till March, 1836. Where does the Secretary find his power to decide that the deposits shall be so made but for seventeen years from the date of the charter, instead of twenty? If he may thus withdraw the deposits two or three years before the expiration of the charter, what should restrain him from exercising the same authority five years before its expiration, or ten years? A plain and cogent necessity, the existence of a case which admits of no reasonable doubt, and which is too urgent for delay till Congress can provide for it, can alone justify an interference with the public monies lodged in the bank by law for the double purpose of safe keeping, and fulfilment of solemn contract.

But supposing it not reasonable for the Secretary to have expected the interposition of Congress, and admitting that he might consider the withdrawing of the deposits as an act which was to be done at some time by himself, how can it, nevertheless, be argued that so early and so sudden a withdrawal was necessary? The Committee can perceive no possible reason for this in any state of facts made known to them.

The withdrawal of the money left on deposit from a bank whose charter is about to expire, is naturally one of the things longest postponed. It is as safe the last day of the existence of the bank, in common cases, as at any previous period. The bank expects the recall of its deposits near the period of its expiration, and prepares itself accordingly. The operation, if made gradually, produces, when thus conducted, the least possible disturbances in the business of the community. Former experience would seem to have held out a salutary light for the guidance of the Secretary in this part of his official duty.

At the time of the expiration of the charter of the former bank, Mr. Gallatin was Secretary of the Treasury, and the public deposits were in the bank. The charter of the bank was to end on the 4th of March, 1811, and it does not appear that Mr. Gallatin thought it necessary to make any provision whatever for removing any part of the deposits, except by drawing on them for the common uses of government, until late in the very month preceding the expiration of the charter. A large amount of those deposits remained, indeed, in the vaults of the bank after its charter had expired, and until they were wanted in the general operations of the Treasury. And why

should it be otherwise? Why should that be done suddenly now which the Secretary thinks could not be done suddenly hereafter, without great inconvenience? Is it not the just inference, from his own argument, that the thing should not have been done suddenly at all? As to the idea, that the credit of the paper of the bank will be depreciated, near the time of the expiration of its charter, or that it would be inconvenient for it, at that time, to be called on for the deposits, the committee are utterly at a loss to see the slightest foundation for such an opinion. Experience is against it; and all reason, as the Committee think, is against it also. There is nothing to render it in any degree doubtful, that the bills of the bank will be in as good credit, the last day of its charter, and even after that time, if any shall be outstanding, as they are now; and there is as little to render it doubtful, that then, as now, the bank would be competent to answer all demands upon it. In the opinion of the Committee, the withdrawal of the fund was both unnecessarily early, and unnecessarily sudden. It might have been made gradual; it might have been deferred; and it might have been, and ought to have been, as the Committee think not ventured upon at all, until the attention of Congress itself had been called to the subject. The Committee therefore, entirely dissent from this first reason, reported by the Secretary. They see nothing which proves to them the existence of the slightest occasion for taking this important step, at the moment it was taken. So far as it depends on this reason, the Committee think the removal was made without necessity; without caution or preparation; with a suddenness naturally producing mischievous consequences, and in unjustifiable anticipation of the legislation of Congress.

But the Secretary thinks there are other reasons for the removal, growing out of the manner in which the affairs of the bank have been managed, and its money applied, which would have made it his duty to withdraw the deposits, at any period of the charter.

Of these reasons, thus arising from the alleged misconduct of the bank, the first is, that many important money transactions of the bank are placed under the control of a Committee of Exchange, of which Committee, no one of the public Directors, as they are called, is allowed to be a member, instead of being transacted by a Board of seven Directors.

This charge consists of two parts; first, that the discounts of bills are made by the committee; and not by a quorum of the board; second, that the public directors are not allowed to be of this committee.

First. It is not alleged that, in the discounts of bills by this committee, any indiscretion has been committed, or any loss incurred, or that in consequence thereof, any facility to the mercantile community has been withheld, or any duty of the bank to the Government violated. The objection is, simply, that bills are discounted by a committee. Supposing this to be an irregularity, or illegality, in the proceedings of the board, how is it to be corrected by withdrawing the deposits? What connexion is there between the two things? It is not pretended that this mode of discounting bills, endangered the deposits; it is not pretended that it made the bank either less able, or less willing, to perform every one of its duties to Government. How should the withdrawal of the deposits then be suggested, by the discovery of such an irregularity, real or supposed? The committee are not able to perceive the least propriety, in applying the power of removal, to a proceeding of this kind, even if it were admitted to be irregular or illegal. But is the practice illegal. It is believed to be not at all unusual? It is believed to be quite common, in banks of large business, for bills of exchange, which are presented every day, and almost every hour in the day, to be discounted either by a committee of the directors, or by the president, or even other officers; acting under such general or-

ders and instructions as the directors, at their stated meetings, prescribe. A large board of directors cannot assemble every day, perhaps not oftener than twice a week. If bills of exchange could only be discounted at these periodical meetings the business of exchange could not go on with the promptitude and despatch so important to commercial men in such transactions.

The committee suppose the truth of these remarks will be at once admitted by all who have knowledge of business of this kind.

The general management and control, the authority of examining and supervising, of contracting or enlarging the amount of daily discounts, according to the state of the bank, and of giving every other order and direction on the subject, still remains with the directors, and is constantly exercised by them. They still manage the affairs of the bank, in the language of the charter, although they may depute to a committee the authority of inquiring and deciding upon the credit of persons whose names are on bills of exchange offered for discount, and on the rate of exchange, current at the day. The legal question would be, whether the directors, by rule or by law, may not authorize a small number of their own board to discount bills. The bank has been advised that it might rightfully do this; and if it be not clear that this opinion is right, it is certainly far from clear that it is wrong; and in this state of the question, the general practice of other banks, under similar provisions in their charters, may well relieve the directors from the imputation of intentional mismanagement.

If, in all this, the bank has violated its charter, what other banks of extensive business have not done the same thing?

But the other subject of complaint, and that which seems to be regarded as the more offensive part of this regulation, is, that the public directors, as they are called, were not allowed to be on this committee.

It may be observed, in the first place, that if the discounting of bills of exchange, by a committee instead of a whole board of directors, be illegal, it would hardly be rendered legal by placing any or all of these public directors on the committee as members. But the Secretary seems to suppose that there was some particular object in this exclusion of these directors, as if there had been something wrong to be done, and therefore secrets to be kept by this committee. It is not easy to see what foundation there can be for this opinion. All these discounts are matter of record. They appear every day in the books of the Bank. Every director, on or off the committee, sees them, or may see them, at pleasure. There is no secrecy, nor any motives for secrecy, so far as this committee can perceive. Very proper causes may have existed, for ought that can have been known by the Senate, for the omission of these particular directors from this particular committee. Their services might have been deemed more useful in other committees, or however respectable in general character, or however useful in other parts of the direction, they may have been esteemed not so well acquainted as others with the business of foreign and domestic exchange. And even if there were, or are other causes for the omission, such as tend less to prove the existence of that harmony and mutual respect which it is so desirable should prevail in such a board, these causes cannot furnish any just ground for asserting, either that the business of exchange was illegally conducted, or that the constitution of the committee was proof of the existence of any motive not fit to be avowed.

But the Secretary entertains an opinion respecting the character and duties of the directors appointed by the President and Senate, in which the committee do not concur. He denominated them "public directors"—"officers of the Government," &c.

By the charter of the bank there are to be

twenty-five directors. Of those, twenty are to be chosen by the individual stockholders, and five appointed by the President, with the advice and consent of the Senate. As the Government owned one-fifth of the stock of the bank, it was judged expedient to place in the hands of the President and Senate the appointment of one-fifth of all the directors. But they are not called public directors, nor officers of the Government, nor public agents. Nor are they entitled, so far as the committee can perceive, to either of these appellations, any more than the other directors. The whole twenty-five directors are joint managers of a joint fund, each possessing precisely the same powers, and charged with the same duties as every other. They derive their appointments, it is true, from different origins, but when appointed, their authority is the same. There is not one word in the charter intimating, in the remotest manner, that the five directors appointed by the President and Senate have any particular duty, or are the objects of any particular trust. The charter calls them not Government directors, not public directors, but simply the directors appointed by the President and Senate. They are placed in the direction to consult with the other directors, for the common good of the bank, and to act with these others, and vote with them on all questions. They are, what the law calls them, directors of the bank, not agents of the Government. They are joint trustees with others, in a joint interest. If any thing illegal or improper takes place in the board, they are bound to resist it by the duty which they owe the individual stockholders, as much as by the duty they owe the Government; because they are agents of the individual stockholders, and have the same authority to bind them by their acts, as to bind the Government; and, in like manner, it is the duty of those directors who are appointed by the individual stockholders, to give notice, as well to Government as to the stockholders, if any thing illegal take place, or be threatened. All those directors act and vote together on the smallest as well as on the highest occasions; and by their joint votes, bind the corporation, and bind both the Government and individual stockholders to the extent of their respective interests in the corporation.

If the directors appointed by the President and Senate had been excluded by the charter, from any part of the power exercised by the others; if it had been forbidden them to interfere, to the same extent, and with the same effect, as the rest, in the common business of the bank, there might be some reason for supposing that an uncommon character, a character not so much of action as of supervision and inspection, was intended to be conferred on them. But they do interfere, and justly, in all transactions of the bank. They do vote and act on all subjects, like the other directors. Being then possessed of this common character of directors, and enjoying all its powers to the fullest extent, the committee know no form of argument, by which an uncommon and extraordinary character is to be raised by construction, and superadded to the common character of directors, which thus already belongs to them.

By granting the charter, and by accepting it, the Government on the one hand, and the individual stockholders on the other, have agreed, that, of the directors, as joint agents of all parties, the stockholders shall appoint twenty, and the Government five. The interest of all parties is confided to this joint agency; and any distinction in their powers, as arising from their different modes of appointment, is in the judgment of the committee not to be sustained. They regard such distinction as entirely inconsistent with the nature of the agency created, and as deriving not the least countenance from any thing contained in the law.

The committee, nevertheless, to avoid misapprehension, wish to repeat, that it is undoubtedly the duty of the directors appointed by the President, and of all directors, to give notice, both to Government and the stockhold-

ers, of any violation of the charter committed or threatened.

The Secretary of the Treasury has thought proper to observe, that the measures of the committee of exchange are, as it appears, designedly and by system, so arranged as to conceal from the officers of the Government transactions in which the public are deeply involved. This, it must be admitted, is a very serious charge. It imputes a corrupt motive. The committee have sought for the foundation, either in evidence or argument, on which this charge rests. They have found neither. They find only the charge, in the first place; and then they find the charge immediately stated as a fact, and relied on as the basis of other charges.

The second reason specially reported by the Secretary as arising from the conduct of the bank, respects the bill of exchange drawn by the Secretary of the Treasury on the Government of France, and purchased by the bank.

The general facts connected with this case are these:

By the late treaty of indemnity between the U. States and France, it was stipulated that the French Government should pay to that of the U. States twenty-five millions of francs, to be distributed among those American citizens who had claims against France for the unlawful seizure, capture, and condemnation of their vessels and property, the whole sum to be paid in annual instalments of four millions one hundred and sixty-six thousand six hundred and sixty-six francs, each, into the hands of such persons as shall be authorized by the Government of the U. States to receive it; the first instalment to be paid at the expiration of one year next following the exchange of the ratification.

On the expiration of the year, the Secretary drew a bill of exchange, signed by himself as Secretary, on the French Government for the amount of this instalment, and sold it to the bank, like any other bill of exchange, and received the proceeds by credit of the amount to the account of the Treasurer in the bank.

On presentation of the bill at the French Treasury, payment was refused; the bill was accordingly duly protested, and it was then taken up by a third person for account of the bank. The damages accruing on this bill, according to law and to constant usage in such cases, are one hundred and fifty-eight thousand dollars.

If this bill had been transferred by the bank, as probably it was, the bank itself would have been answerable for damages even at a higher rate, if a third person had not taken up the bill for the honor of the bank.

On receiving information of the protest of the bill, the officers of the bank, as was their duty gave immediate notice to the Treasury Department, and accompanied that notice with the information, always made in such cases, that the drawers of the bill would be held answerable for the damages. Such is the substance of the facts in this case.

The bank it would appear, was willing to collect the bill on the account of government, and to credit the Treasury with the proceeds when received: a course of proceedings which had this to recommend it, that the money to be received on the bill, was to be received by the government simply in trust for claimants under the French treaty, and was not ultimately destined to the ordinary uses of the Treasury. On the contrary, indeed before the dishonor of the bill was known, it had been made, already, the legal duty of the Secretary to place the fund, so soon as received, at interest for the benefit of the claimants.

But it was thought best to sell the bill, and to realize at once its amount into the Treasury; and the bill was sold to the bank, in preference to others offering to purchase, for no reason, it is to be presumed, except that the terms of the bank were more satisfactory. The bill was thus purchased by the bank, and its proceeds credited to the Treasury. This was a mere transaction of the purchase and sale of a bill of exchange. There was no trust confided to the bank and no fiscal agency in the whole

matter. Indeed the agency of the bank had been declined, the Secretary preferring to deal with it not as an agent, but as a purchaser, proposing to it not to collect the bill, but to buy it. On being remitted to Europe, and presented for payment, the bill was protested. By the universal commercial law, the Government, on the occurrence of this protest, became amenable to the bank for the amount of the bill, with damages. These damages may be ultimately claimed, with justice from the French Government if the bill was drawn upon sufficient grounds, and on proper authority; in other words, if the obligation of the French Government was such that it was bound to accept and pay the bill: but unless there be something in the case to vary the general rule, which the committee do not perceive, these damages were part of the debt which had become due to the bank, as much as the principal sum of the bill. If this be so, how could the directors relinquish this part of the debt any more than the other? They were agents for the corporation; they act as trustees, and have no authority, without consideration, to release, either to the Government or to individuals, debts due, or properly belonging to the corporation.

It has been suggested that the bank should have taken up this bill, when protested on government account. Two answers may be given to this suggestion: the first is, that the bill had been taken up by a correspondent abroad for account of the bank, before it was known in the United States that it had been protested.—The second is, that it would have been unlawful for the bank to have advanced such amount to the Government or on account of Government for the purpose of taking up this bill, or for any other purpose, without an act of Congress. The express words of the charter forbid it.

But, as a reason for removing the deposits, it appears to the committee quite immaterial whether the bank be right or wrong in claiming these damages. If wrong, it will not recover them. It is not to judge of its own rights, and if the appropriate tribunals shall decide that the bank was acting on this occasion, or ought to have acted as the agent of Government, or that it was its duty to take up the bill on account of Government, then the damages will not be awarded to it. And in the worst aspect of this case, how can its conduct in this respect be any possible reason to justify the removal of the deposits? What connexion has this occurrence with the safe keeping of the public treasures, or with the remitting them from place to place, to meet the convenience of the Government, according to the duty of the bank under the charter? The bank thinks itself entitled to damages on a protested bill, purchased and held by itself, and drawn by Government. The Secretary of the Treasury thinks otherwise. If there be no reason to doubt the sincerity of the Secretary's conviction, there is as little to doubt the sincerity of that entertained by the bank; and it is quite inconceivable to the committee that the pendency of such a difference of opinion, on such a question, should furnish any reason whatever for withdrawing the deposits, unless it be at once admitted that the Secretary holds the power of removal as a perfectly arbitrary power, and may exercise it, by way of punishment, whenever, in any particular, the conduct or the opinions of the bank do not conform to his pleasure.

The Secretary does not argue this matter.—He offers no reason in opposition to the legal right of the bank to the damages claimed.—Indeed, he hardly denies the right. He commences his observations on the subject by saying that the ruling principle of the Bank is its own interest; and closes them with another declaration, that, as fiscal agent of the public, it availed itself of the disappointment of its principal for the purpose of enlarging its own profits.

Assertions like these, however else they may be disposed of, cannot be made subjects of argument.

The last charge preferred against the bank, is, that it has used its means with a view to obtain political power, and thereby secure the renewal of its charter.

The very statement of such a charge, as a reason for removing the deposits, is calculated to excite distrust in the wisdom and propriety of that measure; because the charge, too general to be proved, is too general, also, to be disproved; and since it must always rest mainly on mere opinion, it might be made at any time, by any Secretary, against any Bank. It would be, therefore, always a convenient cloak under which to disguise the true motives of official conduct.

If proof be made out that the funds of the bank have been applied to illegal objects, the proper mode of redress and punishment should have been adopted, but what has this to do with the deposits? As in the case of the French bill, the Secretary cannot justify the removal of the deposits on any such ground as this, unless it be conceded that he may use the power of removal as a punishment for any offence of any kind which the Bank in his opinion, may have committed. The committee have already expressed the opinion that no such latitude of power belongs to him, and the assertion of such a power, for such a cause as is now under consideration, shows that the power ought never to belong to any Secretary; because the offence, on account of which it is here proposed to be exercised, is a political offence, incapable of definition, depending merely on the Secretary's opinion, and necessarily drawing into its consideration all the exciting controverted topics of the day. The bank, it is said, "has sought to obtain political power." What is the definition of such an offence as this? What acts constitute it? How is it to be tried? Who is to be the judge? What punishment shall follow conviction? All must see that charges of this nature are but loose and vague accusations, which may be made at any time, and can never be either proved or disproved; and to admit them as sufficient grounds, or justify the removal of the deposits, would be to concede to the Secretary the possession of a power purely arbitrary.

The main fact relied on for this cause of removal shows how extremely unsafe all proceedings on any such reasons must be. The main fact is, that, between December 1850, and December 1851, the bank extended its loans twenty millions of dollars; and it is further alleged that, as if to leave no doubt on the motive of this extraordinary conduct, it continued to add rapidly to its loans, until in May, 1852, while its petition for renewal was pending, those loans amounted to seventy millions. And the Secretary declares that this extraordinary increase of loans made in so short a space of time, and on the eve of a contested election, in which the bank took an open and direct interest, demonstrates that it was using its money to obtain a hold upon the people of the country to induce them, by the apprehension of ruin, to vote against the candidate whom it desired to defeat. This is a strong assertion, but, so far as the Committee perceive, it is assertion merely. It is but the Secretary's own inference from facts, from which very facts his predecessors in office have drawn no such conclusions.

This great extension of the loans, be it remembered, took place in 1851. Why was it not then complained of? How should it have escaped the vigilance of the Secretary at that day at the time it took place? And if it did not escape his vigilance, why did he not then remove the deposits? So, also, as to the amount of loans in May, 1852. That amount was perfectly well known at the time, and if it proved any offence, why was not the punishment inflicted then? How should all other Secretaries have slept over this great mischief?

It might further be well asked, what evidence is there of the existence of any such motive as is imputed to the Bank in this extension

of its loans? There is no evidence but the mere fact itself of the extension, and it cannot be denied that other and very different reasons for the extensions may have existed; so that the charge is proved no otherwise than by inferring a bad motive from an act lawful in itself, and for which good reasons may have existed, nor is it either acknowledged, nor, so far as the committee know, proved that the bank took an open and direct interest, as a corporation, in the election referred to. The bank certainly was much interested in certain accusations which had been brought against it, and which became subjects of public discussion during the pendency of that election. It had been charged with great misconduct and gross violation of its charter. These accusations must undoubtedly have called on the directors for answer. If made before Congress, they were to answer before Congress; if made judicially, they were to answer in the courts; if made in an official and formal manner, and in that manner submitted to the judgment of the country, the directors were bound to meet them before that country by every fair use of fact and argument, not only for the purpose of defending themselves as directors, but for the higher purpose of maintaining the credit of the bank, and protecting the property entrusted to their care. If in thus defending the bank before the community, the directors carried their measures beyond this fair object of defence, or if they resorted to dishonorable or indecorous modes of discussion; if they sought rather to inflame than to reason; if they substituted personal crimination for argument; if, even, they met invective and violence with corresponding invective and violence; they followed bad examples, and are not to be justified.

But on their right to defend themselves before the public against grave charges brought against them and urged before the public, the committee entertain no doubt, and they are equally clear in opinion that the Secretary of the Treasury is not constituted the judge of the mode of exercising this right, and cannot justly remove the deposits merely because the conduct of the bank, in this particular, has not happened to conform to his wishes.

The committee, therefore, consider this last reason of the Secretary equally insufficient with the rest; and they regard it as the most objectionable of all in its principle, inasmuch as it proceeds on grounds which, if admitted, would leave a very high official duty to be exercised from considerations connected with the political feelings and party contests of every day, with no guide but the individual opinion of the officer who is to perform the act; an opinion which, it is possible, may be no less tinged with political motive and feeling than the conduct which it would reprehend.

If an unlimited power be conceded to the Secretary to inflict penalties on the bank for supposed political motives in acts legal in themselves, where is the security that the judge may not be found acting under the same impulses which he imputes to the party accused?

The committee entertain no doubt that the immediate cause of the existing public distress is to be found in the removal of the public deposits, and in the manner in which that removal has been made. No other adequate cause has been suggested; and those who justify the removal do not so much deny this to have been the cause, as insist that it was not necessary that any such effect should have followed from it. In other words, they argue that, notwithstanding the removal, the bank still possessed the power, if it had chosen to exercise it, of warding off the blow which has fallen on the country, or at least of mitigating its severity.

Nothing could have been rationally expected but that the bank, deprived of the deposits, and denounced by the Executive Government, would feel itself called on to take just care of its own interest and its own credit. Of the means necessary to the attainment of these

ends, the directors alone were judges, and the committee have no evidence before them to show they have not exercised their judgment fairly, and with a real solicitude to accommodate the commercial community in the altered state of things as far as has been practicable, consistently with the security of the institution, which it is equally their duty to the public and the stockholders to maintain. They are certainly under every obligation of duty, in the present distressed state of the country, to do every thing for the public relief which is consistent with the safety of the bank, and with those considerations which the approaching expiration of its charter makes it important for the directors to regard.

The removal itself, and the matter of effecting it, are causes entirely sufficient, in the judgment of the committee, to produce all the consequences which the country has experienced, and is experiencing; and these consequences, they think, are to be referred to these causes as their just origin. How could any other result have been expected? The amount of the deposits was nine millions of dollars. On this amount in deposit there was sustained, no doubt, a discount of far greater magnitude. The withdrawal of this sum of nine millions from the bank, necessarily compelled it to diminish its discounts to the full extent of all that part which may be supposed to have been sustained by it. It is to be remembered, too, that this was done at a moment when business of every kind was pressed with great activity, and all the means of the country fully employed.

The withdrawing of so large an amount at such a time, from hands actually holding and using it, could not but produce derangement and pressure, even if it had been immediately placed in other banks, and if no unfriendly feeling, and no want of confidence, had attended the transaction. But, it is quite obvious that the operation to which the Secretary has resorted has been attended with both these additional and powerful causes of derangement. It has created unfriendly feelings, and it has diminished confidence. This change of the deposits is made on the strength of charges against the bank of a very grave and aggravated nature, such as, if true, would most seriously affect its credit for solvency and stability. It is proclaimed to the whole world as having converted itself into a political partisan, misapplied its funds, neglected its highest duties, and entered on a career of electioneering against the government of the country.

These serious charges necessarily put the bank on its defence, and the extraordinary spectacle is exhibited of a warfare by the National Government on the National Bank, notwithstanding that the Government is itself a great proprietor in the bank, and notwithstanding that the notes of the bank are the currency in which the revenues of the country are by law receivable.

The true and natural relation between the Government and the bank is altogether reversed. Instead of enjoying the confidence of the Government, it is obliged to sustain its most serious official assaults, and to maintain itself against its denunciations. The banks selected by Government as its agents are themselves thrown, perhaps unwillingly, into an attitude of jealousy and suspicion with the Bank of the United States. They become cautious and fearful, therefore, in all proceedings; and thus those who should co-operate to relieve the public pressure, are considering mainly their own safety. Fearful of each other, and fearful of the Government, they see the distress continue with no power of beneficial interposition.

It may be asked, why are not these deposit banks able to maintain at large a circulation on the nine millions of deposits as the Bank of the United States? And will they not be thus able when the present panic shall have subsided? The committee think both the questions easily answered.

The Bank of the United States has a credit more general, it may be said more universal,

than any State bank does possess. The credit of the Bank of the United States is equally solid, its bills and notes received with equal confidence for the purpose of circulation and remittance, in every quarter of the country. No paper circulation, so far as the committee know, which ever appeared in the world, has approached nearer to the value and uniformity of a specie currency than the notes and bills of the Bank of the United States. To the State banks these notes and bills have performed the office of specie. All the State banks have discounted upon the possession of them, with the same freedom and boldness as they would have done on an equal amount of the precious metals. The curtailment of their circulation, therefore, if not merely a withdrawing of the amount curtailed from the general mass of circulation, it is removing, rather to the amount curtailed, the basis of the general circulation; and although the actual amount of notes and bills has not been recently greatly diminished, there is reason to suppose that the amount held by the State banks has been greatly diminished.

The removal of the deposits has operated directly on the amount of the circulating medium, at a moment when that amount could not bear any considerable reduction suddenly made, without producing sensible effect. It has diminished prices, and, in some instances, it has had this effect to a very material degree. It has operated on the internal exchange, and has most manifestly been attended with very serious and heavy inconveniences in that important branch of the national interest. More than all, it has acted on opinion; it has disturbed the general confidence, it has weakened the public faith in the soundness of the currency, and it has alarmed men for the security of property. As yet, we hardly know its effects on the credit of the country in Europe. Perhaps it is not easy to anticipate those effects; but if causes which operate here should be found to have been efficient there also, a still greater degree of pressure and distress than has yet been felt may be expected.

The committee, therefore, cannot but regard the removal of the deposits, on the whole, as a measure highly inexpedient, and altogether unjustifiable. The public monies were safe in the bank. This is admitted. All the duties of the bank connected with these public monies were faithfully discharged. This, too, is admitted. The subject had been recently before the House of Representatives, and that house had made its opinion against the removal known by a very unequivocal vote. Another session of Congress was close at hand, when the whole matter would come again before it. Under these circumstances, to make the removal, with the certainty of creating so much alarm, and of producing so much positive evil and suffering, such derangement of the currency, such pressure and distress in all the branches of the business of private life, is an act which the committee think the Senate is called on to disapprove. The reasons which have thus been stated apply to the whole proceedings of the Secretary relating to the public deposits, and make it unnecessary to consider whether there be any difference between his power over monies already in the bank, and his power to suspend future deposits. The committee forbear, also, to consider the propriety of the measures adopted by the Secretary, for the safe keeping of the public monies since their withdrawal from the bank. They forbear, too, from entering into any discussion, at present, of the course of legislation proper to be adopted by Congress under the existing state of things. In this report, they have confined their consideration to the removal of the deposits, the reasons assigned for it, and its immediate consequences; and on these points they have formed the opinions which have now been expressed.

They recommend to the Senate the adoption of the resolution which has been referred to them.

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PROFESSOR RAFINESQUE, of Philadelphia, offers his services to render steamboats incombustible, and not liable to sink, even by the bursting of boilers, or striking against snags, sawyers and rocks. This will save many boats, much property, and the lives of hundreds every year. Those who neglect this easy improvement, deserve to be neglected and deserted by the public as unmindful of safety. Apply, postpaid. 41 R J M M & F

NOTICE TO MANUFACTURERS.

SIMON FAIRMAN, of the village of Lansingburgh, in the county of Rensselaer, and state of New-York, has invented and put in operation a Machine for making Wrought Nails with square points. This machine will make about sixty 6d nails, and about forty 10d nails in a minute, and in the same proportion larger sizes, even to spikes for ships. The nail is hammered and comes from the machine completely heated to redness, that its capacity for being clenched is good and sure. One horse power is sufficient to drive one machine, and may easily be applied where such power for driving machinery is in operation. Said Fairman will make, vend and warrant machines as above, to any persons who may apply for them as soon as they may be made, and on the most reasonable terms. He also desires to sell one half of his patent right for the use of said machines throughout the United States. Any person desiring further information, or to purchase, will please to call at the machine shop of Mr. John Humphrey, in the village of Lansingburgh.—August 15, 1833. A29tf RM&F

RAILWAY IRON.

Ninety-five tons of 1 inch by 1 inch, 300 do. 1 1/2 do. 40 do. 1 1/2 do. 800 do. 2 do. 800 do. 2 1/2 do. soon expected.

Flat Bars in lengths of 14 to 16 feet counter sunk holes, ends cut at an angle of 45 degrees with splicing plates, nails to suit.

250 do. of Edge Rails of 36 lbs. per yard, with the requisite chairs, keys and pins.

Wrought Iron Rims of 30, 33, and 36 inches diameter for Wheels of Railway Cars, and of 60 inches diameter for Locomotive wheels.

Axles of 2 1/2, 3, 3 1/2, 4, 4 1/2, and 5 inches diameter for Railway Cars and Locomotives of patent iron.

The above will be sold free of duty, to State Governments, and Incorporated Governments, and the Drawback taken in part payment. A. & G. RALSTON.

9 South Front street, Philadelphia.

Models and samples of all the different kinds of Rails, Chairs, Pins, Wedges, Spikes, and Splicing Plates, in use, both in this country and Great Britain, will be exhibited to those disposed to examine them. 471meowr

LOCOMOTIVE ENGINES.

THE AMERICAN STEAM CARRIAGE COMPANY, OF PHILADELPHIA, respectfully inform the public, and especially Railroad and Transportation Companies, that they have become sole proprietors of certain improvements in the construction of Locomotive Engines, and other railway carriages, secured to Col. Stephen H. Long, of the United States Engineers, by letters patent from the United States, and that they are prepared to execute any orders for the construction of Locomotive Engines, Tenders, &c. with which they may be favored, and pledge themselves to a punctual compliance with any engagements they may make in reference to this line of business.

They have already in their possession the requisite apparatus for the construction of three classes of engines, viz. engines weighing four, five, and six tons.

The engines made by them will be warranted to travel at the following rates of speed, viz. a six ton engine at a speed of 15 miles per hour; a five ton engine at a speed of 18 miles per hour; a four ton engine at a speed of 22 1/2 miles per hour. Their performance in other respects will be warranted to equal that of the best English engines of the same class, with respect not only to their efficiency in the conveyance of burdens, but to their durability, and the cheapness and facility of their repairs.

The engines will be adapted to the use of anthracite coal, pine wood, coke, or any other fuel hitherto used in locomotive engines.

The terms shall be quite as favorable, and even more moderate, than those on which engines of the same class can be procured from abroad.

All orders for engines, &c. and other communications in reference to the subject, will be addressed to the subscriber, in the city of Philadelphia, and shall receive prompt attention.

By order of the Company, WILLIAM NORRIS, Secretary.

December 2d, 1833.

For further information on this subject see No. 49, page 779 of this Journal. d6

At the commencement of the last year I offered to send the American *tri-weekly* instead of *semi-weekly*, together with two of my periodicals, in exchange to those who would publish my advertisements of the different periodicals. In consequence of this notice, the exchange list was increased to 165. I soon found that the expense would be greater than I had anticipated, yet I had made the offer, and would of course continue it through the year—as I have done. I however find it *too expensive* to continue to send as heretofore. The circulation of my PERIODICALS, (upon which the expense falls,) will not warrant it, and I must, therefore, notwithstanding the uniform kindness with which they have been treated by those to whom they have been sent, materially reduce their exchange list.

The *semi-weekly* American will hereafter be sent in exchange to those who will publish the following advertisements a few weeks for the difference of price. *New-York, January 20, 1834.*

VOL. III. OF THE RAILROAD JOURNAL AND ADVOCATE OF INTERNAL IMPROVEMENTS is published once a week in quarto form, with 16 pages to each number, at \$3; or in *semi-monthly* form, of 32 pages, stitched in a cover of colored paper, at \$4 per annum, in advance. The first and second volumes of the Journal may be had in two parts to the year, either stitched in covers or bound in boards, at the subscription price, with price of binding, in one part, 50 cents, in two parts \$1 per volume. Those in covers may be sent by mail to any part of the country, the same as a magazine. Published at No. 35 Wall st., New-York, by D. K. MINOR, Editor and Proprietor.

THE MECHANICS' MAGAZINE AND REGISTER OF INVENTIONS AND IMPROVEMENTS is now just commencing its second year. It will be continued in a manner altogether superior to that of the first year. It has drawn forth many valuable correspondents, in different parts of the country, with the assistance of whom, and those who may hereafter contribute to its columns, together with the ability of Mr. JOHN KNIGHT, formerly, and for several years, proprietor and publisher of the LONDON MECHANICS' MAGAZINE, who is engaged as Editor, the proprietor has no hesitation in saying that it will be found worthy of an extended circulation and a liberal support. The first year, or two first volumes, having been stereotyped, may now be had either in numbers, or bound in boards—either at wholesale or retail. Price \$1 50 per vol. in numbers, or \$1 75 in boards, or \$3 per annum. A liberal discount made to the trade. Published by the proprietor, D. K. MINOR, at No. 35 Wall st. N. Y.

THE NEW-YORK FARMER AND AMERICAN GARDENER'S MAGAZINE, has commenced the second volume of a new series. It is published once a month, in quarto form of 32 pages to each monthly number, at \$3 per annum in advance. The last volume may be had either stitched in a cover, so as to be sent by mail, or in boards. Price, stitched, \$3 25; in boards, \$3 50. Each subscriber who pays in advance, or previous to the first of April, free of postage or commission, will be entitled to eight additional pages to each monthly number, or 96 extra pages to the volume. Published at No. 35 Wall street, N. Y. D. K. MINOR, Proprietor.

A QUARTERLY JOURNAL OF AGRICULTURE AND MECHANICS will hereafter be published at the same office. Each quarterly number will contain about 300 large octavo pages, embracing the most choice articles from the best agricultural and mechanical publications both in America and Europe. It will form 2 volumes to the year, of about 640 pages each, and will be put up like other quarterly publications, so as to be sent by mail. Price, \$5 per annum, in advance.

N. B. A small edition only will be published.

D. K. Minor also publishes the NEW-YORK AMERICAN, daily, tri-weekly, and semi-weekly.

Also, the PLOUGH-BOY, a cheap agricultural publication, of eight quarto pages, is issued once a week, at \$1 50 per annum, in advance. It contains much interesting reading upon agriculture, &c.

All Letters and Communications for the above publications, may be addressed, free of postage, to D. K. MINOR.

A scientific person versed in Mechanics, Chemistry and Mineralogy, of several years practical experience in different branches of Civil Engineering, and who is also a good draughtsman, is desirous of obtaining employment either as an instructor in some public institution, or as an Engineer upon some private or public work.

He was educated at one of the first scientific institutions in the United States, and was for several years an instructor in the said institution.

A line addressed to B. at Railroad Journal Office, No. 35 Wall street, will meet with immediate attention.

LB ANY SEED STORE AND HORTICULTURAL REPOSITORY.



The subscriber having resumed the charge of the above establishment, is now enabled to furnish traders and others with FRESH GARDEN SEEDS, upon very favorable terms, and of the growth of 1833, warranted of the best quality.

The greatest care and attention has been bestowed upon the growing and saving of Seeds, and none will be sold at this establishment excepting those raised expressly for it, and by experienced seedsmen; and those kinds imported which cannot be raised to perfection in this country; these are from the best houses in Europe, and may be relied upon as genuine.

It is earnestly requested whenever there are any failures hereafter, they should be represented to the subscriber; not that it is possible to obviate unfavorable seasons and circumstances, but that satisfaction may be rendered and perfection approximated.

Also—French Lucern, White Dutch Clover, White Mulberry Seed, genuine Mangel Wutzel, Yellow Locust, Ruta Baga, and Field Turnip Seeds, well worth the attention of Farmers.

W. THORBURN,

347 N. Market st. (opposite Post Office.)

Catalogues may be had at the Store; if sent for by mail, will be forwarded gratis. Orders solicited early, as the better justice can be done in the execution.

Mr. Thorburn is also Agent for the following publications, to wit:—

NEW YORK FARMER and American Gardeners' Magazine. MECHANICS' MAGAZINE and Register of Inventions & Improvements.

AMERICAN RAILROAD JOURNAL and Advocate of Internal Improvements; and the

NEW-YORK AMERICAN, Daily, Tri-Weekly, and Semi-Weekly; either or all of which may be seen and obtained by those who wish them, by calling at 347 North Market street, Albany.

G. LANSING, Engraver on Wood,
35 WALL STREET.

All kinds of Machinery correctly drawn, and neatly engraved.

TOWNSEND & DUFFEE, of Palmyra, Manufacturers of Railroad Rope, having removed their establishment to Hudson, under the name of Duffee, May & Co. offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J. B. Jarvis, Eng. M. & H. R. Co., Albany; or James Archibald, Engineer, Hudson and Delaware Canal and Railroad Company, Carbondale, Luzerne county, Pennsylvania. Hudson, Columbia county, New-York, { January 20, 1834.

SURVEYORS' INSTRUMENTS.

Compasses of various sizes and of superior quality, warranted.

Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by E. & G. W. BLUNT, 154 Water street, corner of Maidenlane.

ENGINEERING AND SURVEYING INSTRUMENTS.

The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely new: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy—also, a Railroad Goniometer, with two Telescopes—and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.

WM. J. YOUNG,

Mathematical Instrument Maker, No. 9 Dock street, Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.

In reply to thy inquiries respecting the Instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad. I cheerfully furnish thee with the following information: The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable.

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any other in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the railroad.

This instrument, more recently improved with a reversing telescope, in place of the vane sights, leaves the engineer scarcely anything to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to later angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,

JAMES P. STABLER, Superintendent of Construction of Baltimore and Ohio Railroad. Philadelphia, February, 1833.

Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind now in use, and as such most cheerfully recommend it to Engineers and Surveyors.

E. H. GILL, Civil Engineer.

German town, February, 1833.

For a year past I have used Instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these Instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY R. CAMPBELL, Engr. Philad., German and Norristown Railroad.

AN INTERESTING AND USEFUL MAP.

A friend of ours has now in a state of forwardness, a Map upon which will be delineated nearly all the Railroads now chartered in the U. States. It is designed to show the present contemplated connexion of the different lines, as well as where others may hereafter be constructed to connect with them. It will be completed in a few weeks, and may be had either in sheets, or put up in morocco for pocket maps, in any quantity, by applying to the subscriber.

D. K. MINOR, 35 Wall street. New-York, August 14, 1833.

INCOMBUSTIBLE ARCHITECTURE.

INCOMBUSTIBLE dwelling-houses and buildings of all kinds devised or built in New York, or any part of the United States, as cheap as any other combustible buildings. Actual buildings and houses rendered incombustible at a small additional expense.

SHIPS of all sorts, and Steamboats, rendered incombustible, and not liable to sink, at a small expense.

For sale, 10,000 lbs. of ANTIGNIS, or Incombustible Varnish, at one dollar per lb.

Apply to C. S. RAFFINESQUE, Professor of Hist. and Nat. Sciences, Chemist, Architect, &c. in Philadelphia, No. 59 North 8th street. A pamphlet given gratis.

References in New-York.—Mr. Minor, Editor of the Mechanics' Magazine; Messrs. Rushon & Aspinwall, Druggists.

Editors in the city or country, copying this advertisement, will receive a commission on any contract procured by their means.

81 R F M & F



INSTRUMENTS.

SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

EWING & HEARTT, at the sign of the Quadrant, No. 58 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude. For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewing & Heartt.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, and one which all Instruments are liable to a screw, or from accidents, to which all Instruments are liable.

They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES P. STABLER,

Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' Instruments of your Manufacture, particularly Spirit Levels, and Surveyors' Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These Instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

WILLIAM HOWARD, U. S. Civil Engineer.

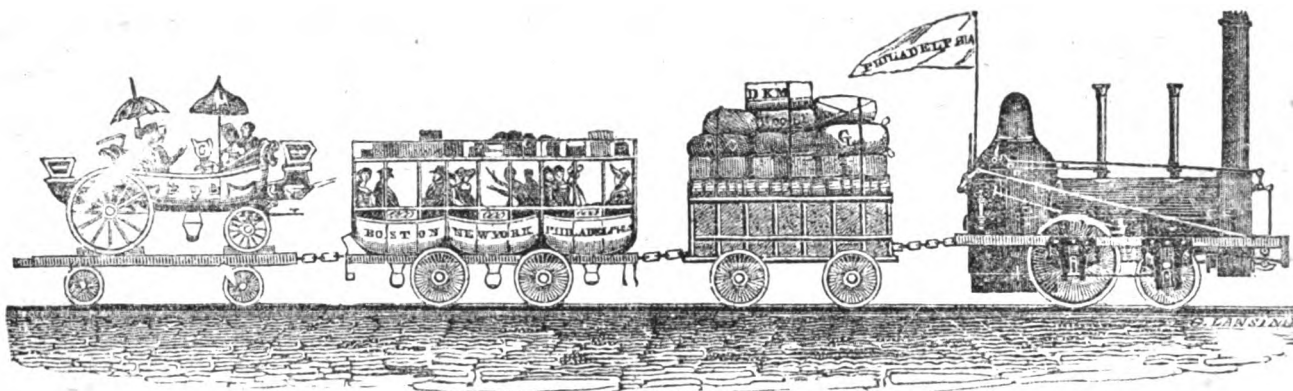
Baltimore, May 1st, 1833.

To Messrs Ewing and Heartt.—As you have asked me to give my opinion of the merits of those Instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming acquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprise so well merits, I remain, yours, &c.

B. H. LATROBE,

Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them upon application, to any persons desirous of perusing the same.



AMERICAN RAILROAD JOURNAL, AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT No. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, EDITOR.]

SATURDAY, FEBRUARY 22, 1834.

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, FEBRUARY 22, 1834.

RAILROADS IN ALABAMA.—We are highly gratified to learn, as we do from the following extracts, that the inhabitants of *Alabama* are pushing forward their works of internal improvement with a spirit, which, if it does not stimulate those of *older* states to action, will at least, we hope, richly reward those who have invested their funds in an enterprise so creditable and so useful.

Railroad.—We regret to state that the first contract, from this place to Courtland, is not yet completed. It is, however, far advanced, and steadily progressing. We understand that the cars now run within seven or eight miles of Courtland, and that not more than about one-fourth of the work, on this remnant of the contract, remains unfinished.

We have the best assurance that the work will all be completed, by or near the first of October next, the time specified in the contracts.

Operations have already commenced under the new contracts, and upwards of one hundred hands are now at work.—[North Alabamian.]

T Tuscumbia, Courtland, and Decatur Railroad.—We are gratified to learn, by means of a letter received from David Hubbard, Esq. Secretary of the Tuscumbia, Courtland, and Decatur Railroad Company, the following facts in relation to the progress of this noble enterprise. "On yesterday (16th inst.) the Tuscumbia, Courtland, and Decatur Railroad Company let to contract the whole line of the road to Decatur, to be finished by the first day of October next, (1834.) From the anxiety manifested to get contracts, by able and responsible bidders, the company had no difficulty in letting out to the best description of men, and on good terms. No doubt is entertained but that the road will be completed in time for planters

above the shoals to get their next crops to market as soon as it can be gathered, without waiting for a tide. But what is of equal importance to the people of Huntsville and Madison county generally, the board of directors, also on yesterday, adopted the following resolution:

'Resolved, That if the right of way can be had, from planters along the line, the Tuscumbia, Courtland, and Decatur Railroad Company will extend their road to Huntsville and have it completed during the next year.'—[Huntsville (Ala.) Mercury.]

There can hardly be a doubt, we should think, but that the inhabitants on the line will not only assent, but also, with the inhabitants of Huntsville, give their hearty support to a measure which will so largely contribute to their immediate prosperity.

The Tuscumbia, Courtland, and Decatur Railroad is certainly a measure creditable to those who projected and have thus far prosecuted the work; but we apprehend that the road between the two extremes is a *small* part only of the line of railroad which will ultimately be connected with it. It will be observed, by a reference to the map, that it is in the direct course of a continuance of the South Carolina Railroad to the Mississippi River at Memphis, or some other suitable point—perhaps *Natchez*; and who that has observed the progress of improvements within the last few years, can doubt the ultimate accomplishment of a work so desirable? It will also be intersected by branches from Tennessee, on the north, and from the interior of Alabama on the south. One has already been chartered from Moulton, the county seat of Lawrence county, to connect at some suitable point, probably at Courtland. In short, the Tuscumbia, Courtland, and Decatur Railroad is a *germ* from which many others will spring: a work, therefore, which will do great and lasting credit to those who projected and have thus far prosecuted its accomplishment.

ITHACA AND OWEGO RAILROAD.—We learn by a letter received in this city, from John Randel, Jr. Esq. the engineer of this road, that on the 13th of the present month, 13 miles of this road were opened for transportation and travel. The inclined plane at Ithaca was for the first time used, and successfully. A car loaded with two tons of iron and thirty passengers,

passed up the great plane, an elevation of 405 feet, in eight minutes. On the 15th, the road was to have been still further opened to a place beyond Smith's tavern, which is more than half the whole distance to Owego. By the middle of April, if no uncommon event should interfere, the whole line will be finished to that place. All the stone work, bridges, viaducts, and heavy jobs being finished, nothing of consequence remains but to lay the remaining rails. All the materials are on the ground, and the force on the road is at present about 700 men.

We congratulate those gentlemen in New-York and elsewhere, whose unshaken confidence in the work has enabled it to proceed. It has been demonstrated again and again to occupy a most important avenue to trade, and if it only secure the transportation and travel now existing, it will divide an annual interest of from 14 to 21 per cent. There is no mistake about this. The village of Ithaca and its vicinity already pays annually \$150,000 toll at Montezuma on merchandize and produce carried upon the canal.

The trade of that region is immense; 140 mills cluster within twelve miles of the village. Ithaca in fact is the key to the trade of the upper counties of the Susquehanna, and distributes salt, plaster, castings, and merchandize, to a great section of country in Pennsylvania. It receives lumber, (the finest that comes to this market,) produce and coal in large quantities, and will furnish an inexhaustible supply of fuel for the furnaces and salt works of our state. It commands the Baltimore, the Philadelphia, and New-York markets, and has an equal chance with the west for those of Canada. And here we may remark, that this portion of the state has arrived at its present prosperity *without* the fostering care of the legislature. While all other sections have from time to time, by expenditures in public works, by liberal endowments to public institutions, and multiplied acts of incorporation, been aided in their upward course, some fatality appears to have attended the applications from this quarter. They have been prejudged, or decided upon without a hearing, or have been overthrown by pitiful intrigues and jealousies unworthy of high minded legislation. The railroad has been made by the enterprise, almost termed folly, of a few individuals, in defiance of the sneers, if not the opposition, of those sagacious characters who always predict the ruin and downfall of every project not of their own creation. The tolls which will be received on these 13 miles of the road, even now, will at once be equal in amount to those received on any road of a similar extent in the United States.—[Albany Daily Advertiser.]

Report of the Engineer on the Survey for a Railroad between Richmond and Potomac Creek.

To Messrs. Lancaster, Denby & Co., F. & J. S. James, John H. Eustace, Edwin Porter, James Bosher, Merrit M. Robinson and others, subscribers to the Survey between Richmond and Potomac Creek:

GENTLEMEN—I have the honor to present you the following report on the surveys made under my direction, with a view to a railroad between the city of Richmond and the Potomac.

The line traced commences on Richmond Hill, near the Old Church. After passing around some ravines emptying into Shockoe creek, and near the Fairfield race course, it crosses, at station 70, the Mechanicsville turnpike; soon after which it descends into the valley of the Chickahominy, which it crosses a short distance above the junction of that stream and the Brooke. After crossing the Chickahominy, it passes around the head waters of the Totopotamoy, to station 247, at which point it crosses the stage road leading from Richmond to the Oaks. A few hundred yards farther it passes the Oaks, and is afterwards traced across some of the branches of the Machumps creek, and in the neighborhood of the road leading from the Oaks to the South Anna bridge. At station 321 it commences descending to the valley of the Pamunkey, which is passed about two hundred yards below the junction of the North and South Anna rivers.

From the valley of the Pamunkey, the line ascends at a graduation of thirty-three feet per mile, through the lands of Williams Carter and Doctor Morris, to the summit between the North Anna and Reedy Swamp. It is thence traced across several branches of Reedy Swamp through the lands of Messrs. Guy, Young, and Duling, to station 539, at which point it commences descending, on an uniform graduation of thirty-five feet per mile, to the valley of the Polecat river.

The summit between the Polecat and the Mattapony is passed with but little difficulty, the excavations and fillings in this distance being very moderate, and the grades, both ascending and descending, not exceeding thirty feet per mile.

From station 626, in the valley of the Mattapony, examinations have been made on two routes. The first line traced crosses the Mattapony a short distance beyond this point, and after passing on table land to the right of this stream, for about two miles, ascends on a graduation of thirty-one feet per mile, to the dividing ground between the Mattapony and Morocosac. Soon after attaining this level, it crosses the stage road between the Bowling Green and Fredericksburg, and is afterwards traced to the right of this, and in the neighborhood of the old court-house road, as far as Quisenbury's, which it passes about three-fourths of a mile to the left. From Quisenbury's it descends along the Ware creek to the Rappahannock flats, which are reached on the lands of Mr. William Taylor. From William Taylor's the line is taken along the flats, on ground generally favorable, to Fredericksburg.

The second line passes along the Mattapony Flats, on a nearly level graduation, to station 254, a few hundred yards above Downer's Bridge; after which it ascends, on a graduation for the greater part of the distance of thirty-two feet per mile, to the dividing ground between the Mattapony and Long Branch. From the summit, at station 174, near the head of Long Branch, it passes down the valley of Long Branch to the Massaponax, which is crossed about two hundred and fifty yards below the mouth of Furnace Run. About one and a half miles beyond this stream, it connects with the line above described.

To both of these lines objections may perhaps be made on local considerations, which

can probably be avoided on a definitive adjustment of the line. The line first traced has the recommendation of pointing directly to the Potomac; but its advantages in this respect would probably be deemed by a company more than counterbalanced by the consideration of making Fredericksburg a point in the main line of improvement, and the importance of avoiding a draw bridge at the Rappahannock. The estimate has therefore been made on the line last traced, by which the whole distance between Richmond and Fredericksburg would be sixty and a half miles.

Between the Rappahannock and Potomac, no examinations have been made with instruments, but a reconnoissance of the country shows two passes at which the dividing ground between these streams may be passed without material difficulty. The first of these is on the land of Mr. Pratt, near the head of Muddy creek, where a cut of moderate depth would admit of a line being afterwards taken, along one of the ravines of the Potomac creek, to the present steamboat landing. The second near the head of Lamb's creek would only be available for a line which should terminate on the Potomac, below the mouth of Potomac creek. Such a line would have the advantage of ending at a point which would afford much better water than can be had on the creek, and of course would admit of the use of a much larger class of steamboats and vessels on the Potomac, in connection with the railroad.

PLAN OF CONSTRUCTION AND ESTIMATE.—The principal difficulties on the line would consist of heavy cuts and fillings, and occasionally expensive constructions of masonry, or brick work, in situations where stone cannot be procured. It will probably be found advisable to adopt this substitute the whole distance between the Reedy Swamp and the head of Long Branch.

The superstructure of the railroad would be similar to that adopted on the railroad lately constructed between Petersburg and the Roanoke, except that white oak rails, plated with iron, are proposed, instead of yellow pine. This last material has been generally made use of on the railroads hitherto constructed in our country; but it has been found too soft and yielding to admit of the use of as heavy engines as it would be advantageous to employ. It is understood that a sufficient quantity of white oak timber may be obtained, on the line of the improvement, to admit of the superstructure in contemplation being executed within the terms of the estimates.

For more convenient consideration the cost of the work between Richmond and Fredericksburg is presented in four divisions, into which the line naturally divides itself.

DIVISION I.

Between the point of commencement and station 139, a short distance beyond the crossing of the Chickahominy, 7 miles.

ITEMS.	
Clearing - - - - -	\$ 100 00
Excavation, 119,335 cubic yards, averaged at 10 cents per yard	11,933 50
Embankment, 172,451 cubic yards, at 12 cents	20,694 12
Embankment, 42,266 cubic yards, at 15 cents	6,339 90
Masonry, of bridges and drains, 1763 perches, at \$5 per perch	8,815 00
Superstructure of bridges - - -	2,800 00
Railroad superstructure, 7 miles, at \$3000 per mile	21,000 00
	\$71,682 52

DIVISION II.

Between stations 139 and 388, near the south bank of the Pamunkey, 14 miles and 78 feet.

ITEMS.	
Clearing - - - - -	\$ 580 00
Excavation, 227,156 cubic yards, at 10 cents	22,715 60
Do. 220,581 cubic yards, at 13 cts.	28,675 53

Embankment, 251,364 cubic yards, at 12 cents	30,163 68
Do. 218,306 cubic yards, at 14 cts.	30,562 84
Masonry, 2769 perches, at \$5 50	15,229 50
Railroad superstructure, 14 miles and 78 feet, at \$3000 per mile	42,044 32

\$169,971 47

DIVISION III.

Between station 388 and station 626, near the Mattapony river, 13½ miles.

ITEMS.

Clearing - - - - -	\$ 350 00
Excavation, 500,426 cubic yards, averaged at 11 cents	55,046 86
Embankment, 336,474 cubic yards, averaged at 12 cents	40,376 88
Do. 68,504 cubic yards, averaged at 15 cents	10,275 60
Brick work of Bridges and Culverts.	
807,000 bricks, laid in lime mortar, at \$9	7,263 00
Masonry, 2660 perches, at \$4 50	11,970 00
Superstructure of bridges - - -	4,800 00
Railroad superstructure, 13½ miles, at \$3000 per mile	40,500 00

\$170,582 34

DIVISION IV.

Between station 626 and Fredericksburg, 28 miles and 82 feet.

ITEMS.

Clearing - - - - -	\$ 450 00
Graduation, including drains, 11½ miles of railroad, along the Mattapony flats, averaged at \$2400 per mile	28,000 00
Bridges across South river and Mattapony - - - - -	6,000 00
Excavation, 242,885 cubic yards, averaged at 10 cents	24,288 50
Embankment, 119,917 cubic yards, averaged at 11 cents	13,190 87
Do. 65,112 cubic yards, averaged at 15 cents	9,766 80
Brick work in Culverts and Drains.	
388,000 bricks, laid in lime mortar, at \$9	3,492 00
Masonry, 1910 perches, at \$4	7,640 00
Superstructure of bridge at Massaponax - - - - -	1,600 00
Railroad superstructure, 26 miles and 82 feet, at \$3000 per mile	78,046 60

\$172,474 77

SUMMARY.

Division I.	\$ 71,682 52
II.	169,971 47
III.	170,582 34
IV.	172,474 77
	\$584,711 10

Add for superintendence and contingencies ten per cent. - 58,471 11
Probable expenditure for depots, warehouses and water stations, and for locomotive engines, cars and carriages, - 120,000 00

Capital stock required for the railroad to Fredericksburg - \$763,182 21
As before observed, no survey has been made between Fredericksburg and the Potomac, and an accurate estimate cannot therefore be presented for this portion of the route, a bridge across the Rappahannock would probably cost \$20,000; and the distance by the way of Muddy creek, the nearest of the two routes, to the steamboat landing, may be computed at thirteen miles. Supposing the cost of this portion of the line to exceed, somewhat, the average expense of the railroad between Richmond and Fredericksburg, and a similar proportional expenditure to be necessary for locomotives, cars, &c. an increase of capital to the extent of \$200,000 would be necessary for the extension of the railroad to the Potomac.

The above aggregates will probably exceed the expectations which have been formed as

ADVOCATE OF INTERNAL IMPROVEMENTS.

to the cost of the work, but objects proportionably large would seem to justify its accomplishment. To the inhabitants of Richmond and Fredericksburg, it will afford a means of speedy intercommunication, by bringing them within a few hours transit of each other: to the intervening country a cheap and speedy transportation of its products, and to the portions of the state trading with Richmond and Fredericksburg, the benefit of improved markets. The execution of the work in question may also be expected in a few years to lead to that of lateral railroads along both branches of the Rappahannock, and in this aspect not only the rich counties at the foot of the Blue Ridge, but the Valley counties of the Shenandoah, Frederick, and Jefferson, seem to be particularly interested in its accomplishment.

But these results, important as they are, appear trivial compared with those which may be expected to ensue from the execution of the proposed work, if it should become the line of northern and southern travel. So far, this has been taken principally by packets plying between New-York and the southern ports. But the lines of railroads now progressing or executed in the northern states will have afforded, within two years from the present time, a steamboat and railroad communication between Boston and the Potomac, and the improvements projected in the south will have equally the effect of accumulating, on our southern border, a large and steadily increasing travel. It can scarcely be the policy of the legislature to direct this travel from the limits of the state, to place it on the bay. Unless this should be done, the proposed work, in connection with the Petersburg railroad, will have the effect of conducting it through the interior of the state, and of affording to the districts of the commonwealth, through which it will pass, as well as to the towns of Richmond, Fredericksburg and Petersburg, all the benefit which must necessarily result from positions on the great line of national thoroughfare.

That the work, under these circumstances, must be productive, there can be no doubt. It would seem, if the above views be correct, to be equally clear, that no work which has been projected in Virginia can be, in proportion to the expenditure which will be required for its completion, of more importance to the commonwealth, or have higher claims on its consideration and patronage. All which is respectfully submitted.

MONCURE ROBINSON, C. E.

Richmond, January 4th, 1834.

[From the London Courier, 14th Nov.]

It may be said of railroad projects, as it is sometimes said of other things, that "it never rains but it pours." No matter how far apart any two places may be, or whether the traffic between them be great or small, we are assured that to unite them by a railroad will be a highly profitable concern. We are further assured, that it is no great matter whether the line between them be level or not, seeing it has been opportunely discovered that an undulating line is preferable to one that is level. The success of Burns turned the heads of thousands of his countrymen, who fancied that because they could string together a few doggerel verses, they were rivaling the wit, and simplicity, and pathos, of the Ayshire bard. The success of the Manchester and Liverpool Railroad Company seems to have had a similar influence over the proprietors and speculators of this end of the island. But we are afraid there are not many of the newly-fledged schemes destined to make a nearer approach, in point of productiveness, to that prosperous concern, than the mass of his competitors did to Burns. Those, to whom the interest of their capital is any object would do well to pause and reflect seriously what they are about before embarking in any one of these schemes. Those who can afford to promote a public object, at the expense of their subscriptions, or who expect to gain more indirectly by the construction of the railroads

than the amount of their shares, are persons who may safely engage in such projects. Other parties will best consult their interests by confining their patronage to the risking of their bodies in the "fast coaches," when once they are set in motion.

It would be quite as logical to infer that because a £50 share in the Trent and Mersey Canal is worth £650, a share in the Croydon Canal should fetch a corresponding price, as it is to infer, from the success of the Manchester and Liverpool railroad, the success of the numberless schemes of the sort now before the public. We affirm, without fear of contradiction, that there are not within the British Empire any two places, 30 miles distant, between which a railroad can be made with half the chances of success as between Manchester and Liverpool. The latter is, in fact, the port of Manchester; and while the latter is the centre of the cotton manufacturing district, there is, within the single hundred in which it is situated, a population of 650,000! The intercourse between Manchester and Liverpool, before the railroad was so much as thought of, was vastly greater than that between any other two places in the Kingdom; and it must necessarily continue to increase, not only with the increased facilities of communication, but with the rapid growth of population, manufactures, and commerce, in that part of the country. In fact, looking at the Manchester and Liverpool railroad in an economical point of view, its moderate success is the only very striking feature about it. On the 23d of January last, the directors declared a half-yearly dividend at the rate of £4 4s. per cent. This amounted to £33,468 15s., leaving a surplus of only £693! In most concerns with which we are acquainted, this would be considered very improvident management. The railroad carriages, &c., have cost little less than a million; and they are very far certainly from being particularly durable. It is affirmed, no doubt, that the repairs which are constantly being made on the road and carriages, keep them uniformly up to the desired degree of goodness; and that, therefore, it is unnecessary to accumulate a sinking fund. But it is alleged by others that this is not really the case, and that at no very remote period a very large additional outlay will be required. Whether this be so we cannot pretend to affirm. But, taking the facts as they stand, and setting them in the most favorable point of view, they give slender encouragement to the projects now on foot. Here we have a railroad 30 miles in length, between two places having the greatest intercourse by far of any two in the empire, and because it pays eight per cent, we are told that we may all become as rich as Croesus by subscribing to railroads three, four, and five times the length, between places that have not a third, a fourth, or a fifth part of the intercourse between Manchester and Liverpool! We like quick travelling, and nothing would give us greater pleasure than to see the country intersected by railroads; and we do not mean to deny, that in a few cases they may be constructed with a view to the profit of the projectors or shareholders. But our love of rapid motion is not greater than our dislike of quackery and humbug. Let no one, who expects to profit by such schemes, put his faith in mere prospectuses.

IMPORTANT DISCOVERY.—A gentleman in this town believes he has discovered important improvements on the Burdenian plan of constructing steamboats, which he conceives will eventually supersede every other mode now in use. The improvements, it is thought, will combine every advantage of the Burden plan as to speed, and 1st, a great increase of strength—2d, a much less draft of water—3d, an adaptation to lake or river navigation, in deep, shallow, calm, rapid, or rough water—4th, an adaptation to the conveyance of passengers, or both freight and passengers, affording abundant room for the stowage of freight, which Mr. Burden's plan does not embrace—5th, an

increased facility in turning round—6th, a great diminution of cost in the construction. It is supposed that a boat on this plan may be built, which will run as fast as the boat built by Mr. Burden, having the same power of engine, and draw not more than one and a half or two feet of water. Should the sanguine expectations entertained of the value of the improvements, upon further consideration, prove well founded, a further notice will probably appear.—[Brockville Recorder.]

ANOTHER STEAMBOAT.—This is emphatically an age of steam inventions. New steamboats, steam-boilers, and steam-engines, greet us on every hand; and in this neighborhood there seems to be an astonishing fecundity in this respect.

Mr. Burden's wonder was long ago duly announced, and intelligence of it has been carried by the four winds to the four quarters of the globe. Not long since, some unknown friend sent us a paper printed in Ireland, containing an account of Mr. Burden's invention, originally given in this paper.

We have also noticed, upon the authority of others, Mr. Langdon's invention, and owe him an apology (which we find in the multiplied duties of the conductor of a daily paper), that we have not yet embraced his invitation to examine his boat.

Our object now is, as chroniclers in this region, to inform the public of another invention or model of a steamboat, which, being exhibited in this city, we had the pleasure of seeing on Tuesday. The plan is approved of by several prominent individuals in this city, who, besides, are connected with the present steamboat association, and who, we understand, design, (such is their confidence of its merits,) at no distant day, to reduce the invention to the test of experiment.

The model, which is remarkable for its simplicity and the absence of extra and unnecessary incumbrances, represents a boat 250 feet long, and 50 feet wide, composed or built upon two hulls (each 250 feet long) lying parallel to each other, and 20 feet apart in the centre.

The hulls are designed to be 10 feet deep, and 11 wide, with perpendicular sides, so that, at the same time they serve to buoy the boat, they supply two long and spacious cabins; which being below and not above the deck, will obviate the hindrances to speed, which boats having their cabins and a load of fixtures on deck, in certain states of wind and weather, sometimes experience.

The deck is arched, and in such a way, if not to present the full resistance and power of the perfect arch to the weight that may be placed upon it, yet so as in a great degree to strengthen the boat, and render it fully adequate to the uses for which it is designed.

The sides and bottom of the hulls, where they come in contact with the water, are constructed on a line purely designed to diminish resistance, and forming the segment of a circle of an immense diameter.

The boat is to be propelled by a single paddle-wheel of great power, revolving in the centre between the hulls.

The inventor is a young man of this city, of promise and ingenuity, and the present evidence of it is not the first the public has to judge from. His profession and calling have given him opportunities of observation, and of studying the subject of improvements in the application and use of steam and steamboats, which few others have had, and which, with a laudable ambition, he has endeavored to improve for the benefit of the public, and we hope of himself also.

It is also intended to introduce a coal-boiler, constructed on a new principle, the effect of which, it is assumed by those acquainted with the subject, (which we profess not to be,) will be the saving of at least 50 per cent. in the expense of fuel.

To construct a boat 250 feet long, it is estimated will cost \$30,000.

The hulls will be framed upon light but strong timbers, upon which are to be fastened successive layers of thin tough oak plank, or boards. The first layer to run horizontally lengthwise the boat; the second crosswise; the third crosswise diagonally; and the fourth lengthwise; the whole fastened or riveted together, by iron nails or rivets, and to constitute a thickness not exceeding four inches: forming, in short, a kind of medium between boats built on the plan of Mr Annesley and common boat building.—[Troy Press.]

RAILROAD MEETING.—At a large and respectable meeting of citizens, from the several towns of Orange county, held at the Orange Hotel, in the village of Newburgh, on the 11th February, 1834, for the purpose of considering the propriety of petitioning the legislature for aid in the construction of the New-York and Erie Railroad, the hon. Nathaniel Jones, of Warwick, was elected President; Abraham M. Smith, Esq. of Newburgh, was chosen Vice-President, and Edward Blake, of Montgomery, and Robert Sly, of New-Windsor, were appointed Secretaries.

David Ruggles, Esq., after addressing the meeting, moved that a committee be appointed to draft a memorial to the legislature, upon the subject for the consideration of which the meeting was assembled. The meeting was also addressed by Isaac R. Van Duzer, Samuel J. Wilkin, Charles Borland, John Hallock, Jun., William W. Brooks, and Abraham Crist, Esqrs. upon the importance to the state of New-York of the subject under consideration; whereupon, David Ruggles, of Newburgh, Isaac R. Van Duzer, of Goshen, Charles Borland, of Montgomery, William W. Brooks, of Blooming-Grove, John B. Booth, of Goshen, John Hallock, Jun., of Minisink, and Abraham Crist, of Walden, were appointed a committee to prepare a memorial to the legislature, for their aid and encouragement in constructing the said railroad.

The committee having consulted together, reported a memorial to the legislature, which was unanimously adopted.

RAILROADS IN GEORGIA.—Companies have been incorporated by the Legislature of Georgia to construct three Railroads in that state; one from Savannah to Macon; one from Macon to Forsyth, and one from Augusta westwardly.—It is required by these charters that these roads shall be commenced within two years of the passage of the act, and shall be completed within six years thereafter.

BUSINESS OF THE CANAL.—We have been politely furnished with the following return by Gen. Humphrey, canal collector in this city:

The whole quantity of down freight upon which toll is charged by weight, that was conveyed on the New-York canals to Albany, in 1833, amounts to one hundred and fifty-two thousand nine hundred and thirty-five tons, at 2000 pounds per ton, viz.:

Barrels of flour.....	734,133
" ashes.....	22,922
" provisions.....	13,439
" whiskey.....	19,908
Hogsheads do.....	873
Bushels of salt.....	17,116
" wheat.....	293,504
" coarse grain.....	122,944
" barley.....	257,252
Boxes of glass.....	2,187

Also, the following, upon which toll is not charged by the ton:

Cords of wood.....	20,960
Feet of timber.....	74,350
" lumber.....	55,333,547
M. of shingles.....	74,350

There were 68,321 tons of merchandise, furniture and sundries, sent up the canal from Albany.

The whole amount of tolls received by the collector at Albany is \$323,689 83, making an increase of \$37,053 56 over the receipts of the last year.

Number of boats arrived and cleared, 16,834.

PRODUCE AND COAL IN PHILADELPHIA.—The following statement exhibits the number of bushels of grain, salt, (coastwise,) and coal, discharged at the port of Philadelphia for the years

	1832.	1833.
Corn.....bushels	631,098½	629,654
Wheat.....ditto	232,831½	156,255½
Rye.....ditto	39,608	77,302½
Barley.....ditto	55,508½	45,760½
Oats.....ditto	95,329	93,434½
Flaxseed.....ditto	5,204½	9,890½
Beans and Peas.....ditto	1,414½	378
Clover-seed.....ditto	575	—
Salt.....ditto	114,378	63,971½
Coal.....ditto	142,754	180,145

Flour Inspection.—Amount of flour and meal inspected for the port of Philadelphia, for the year ending 31st Dec. 1833:

Wheat Flour.....	378,590 barrels.
Ditto.....	22,725 hf. ditto.
Rye Flour.....	40,011 barrels.
Corn Meal.....	40,415 ditto.
Ditto.....	7,549 hds.
Middlings.....	2,597 barrels.

Inspection of Salt Provisions, in the city and county of Philadelphia, for the year 1833:

3,123 barrels of beef.
508 hf. bbls. ditto.
6,765 hds. of pork.
69 hf. bbls. ditto.
53 bbls. of herring.

10,518.

WONDERS OF ART.—You behold a majestic vessel bounding over the billows from the other side of the globe; easily fashioned to float with safety over the bottomless sea; to spread out her broad wings, and catch the midnight breeze, guided by a slow drowsy sailor at the helm, with two or three companions reclining listlessly on the deck, gazing into the depths of the starry heavens. The commander of this vessel, not surpassing thousands of his brethren in intelligence and skill, knows how, by pointing his glass at the heavens, and taking an observation of the stars, and turning over the leaves of his "Practical Navigator," and making a few figures on his slate, to tell the spot which his vessel has reached on the trackless sea; and he can also tell it by means of a steel spring and a few brass wheels, put together in the shape of a chronometer. The glass with which he brings the heavens down to the earth, and by which he measures the twenty-one thousand six hundredth part of their circuit, is made of a quantity of flint, sand, and alkali—coarse opaque substances, which he has melted together into the beautiful medium, which excludes the air and the rain and admits the light,—by means of which he can count the orders of animated nature in a dew-drop, and measure the depth of the vallies in the moon. He has, running up and down his main mast, an iron chain, fabricated at home, by a wonderful succession of mechanical contrivances, out of a rock brought from deep caverns in the earth, and which has the power of conducting the lightning harmlessly down the sides of the vessel into the deep. He does not creep timidly along from headland to headland, nor guide his course along a narrow sea, by the north star; but he launches bravely on the pathless and bottomless deep, and carries about with him in a box a faithful little pilot, who watches when the eye of man droops with fatigue, a small and patient steersman, whom darkness does not blind, nor the storm drive from his post, and who points from the other side of the globe,—through the convex earth,—to the steady pole. If he falls in with a pirate he does not wait to repel him, hand to hand; but he puts into a mighty engine a handful of dark

powder, into which he has condensed an immense quantity of elastic air, and which, when it is touched by a spark of fire, will instantly expand into its original volume, and drive an artificial thunderbolt before it, against the distant enemy. When he meets another similar vessel on the sea, homeward bound from a like excursion to his own, he makes a few black marks on a piece of paper and sends it home, a distance of ten thousand miles; and thereby speaks to his employer, to his family, and his friends, as distinctly and significantly as if they were seated by his side. At the cost of half the labor with which the savage procures himself the skin of a wild beast, to cover his nakedness, this child of civilized life has provided himself with the most substantial, curious, and convenient clothing, textures and tissues of wool, cotton, linen, and silk, the contributions of the four quarters of the globe, and of every kingdom of nature. To fill a vacant hour, or dispel a gathering cloud from his spirits, he has curious instruments of music, which speak another language of new and strange significance to his heart; which make his veins thrill, and his eyes overflow with tears, without the utterance of a word—and with one sweet succession of harmonious sounds, send his heart back, over the waste of waters, to the distant home, where his wife and his children sit around the fire-side, trembling at the thought that the storm which beats upon the windows, may, perhaps overtake their beloved voyager on the distant seas. And in his cabin, he has a library of volumes—the strange production of a machine of almost magical powers—which, as he turns over their leaves, enable him to converse with the great and good of every clime and age, and which even repeat to him, in audible notes, the laws of his God, and the promise of his Saviour, and point out to him that happy land which he hopes to reach when his flag is struck, and his sails are furled, and the voyage of life is over.—[E. Everett.]

RAIN WATER.—In our country there falls rain, including melted snow, to the average depth of 35 inches. On a surface forty feet square, there falls yearly 34,909 wine gallons; and if all this were secured in cisterns, there would be nearly one hundred gallons for every day's consumption, or about three barrels. This water, if well preserved, would be the very purest and best for most domestic purposes. The horse and the cow prefer rain water to pump or well water; and though it would not be entirely governed by their decision, yet great respect is due to their judgment in such matters. The water of many wells is tainted in such a way as to make it less fit for a solvent; and it does not so perfectly combine with nutritious substances, to form kyle, and nourish the human system. They who live in situations where water is not easily procured from the ground, may be told that the purest water is descending around them; and if they will only be at the necessary expense to secure this gift of heaven, they may provide an abundant supply. On such reservoirs the inhabitants of Palestine placed much dependence; and it is a merciful appointment of God, that in warm countries, where the greatest supply of water is needed, the most rain descends. We may yet find good capacious cisterns, of brick or stone, and Roman cement, economical additions to our do-

mestic conveniences. A cistern ten feet square, and ten feet deep, would contain 118 hogsheads of 63 wine gallons each, and would secure to most families a constant supply of water.—[Scientific Tracts and Lyceums.]

THE CHEAP TRANSPORTATION OF BOOKS AND PERIODICALS.—The present state of society demands a cheap system of conveyance for the diffusion of knowledge. The post-office system is too expensive. On this system conveyance must be more expensive, from its rapidity, than is necessary for all purposes. A vast number of publications now issued are not required to be transmitted with great speed. As mail stages now usually run, they carry a load of one thousand pounds at three times the expense of conveying the same load at a moderate rate. "In England," says the Scientific Tract on Railroads, "every coach on the best roads that runs for twenty-four hours, at nine miles per hour, drawing not over two tons, requires no less than 180 horses, or ninety each way. Less than 12 horses would carry the same weight for the same time, at two and a half miles per hour." In the mail stages of our country, weighing about a ton, less than a ton of passengers and baggage is usually carried. To transport this load at the rate ordinarily travelled, the horses are changed every twelve miles. To carry the load, therefore, thirty-six miles, twelve horses are needed. At the rate of four miles an hour, four horses would transport this load in waggons. At a moderate speed, therefore, a load of magazines and books would be conveyed at one third the cost of transportation by rapid mail stages. But there is no advantage in my having many of the periodicals I receive by a rapid conveyance. A system of baggage waggons, transporting small articles over the country at a cheap rate, would, therefore, greatly facilitate the diffusion of knowledge. I wish to take the Biblical Repository, and find that four numbers weigh two pounds and ten ounces. I live rather more than 100 miles from Boston; and the postage of the whole, comprising 50 sheets, would be \$1.25; while the freight, at the rate at which goods are commonly transported in waggons, would be a little less than 2½ cents. The postage of forty numbers of the Temperance Recorder would be 60 cents; while the freight of the whole 40, if the papers were dried, and thus made light, would not be more than one cent. When the post-office was established there did not exist such a periodical literature as distinguishes the present age; and therefore, the United States did not provide for such a conveyance of packets as is now needed. The law now in force, passed March, 1827, enacts, "That no person, other than the Postmaster General, or his authorized agents, shall set up any foot or horse post for the conveyance of letters and packets upon any post road, which is or may be established as such by law." This law forbids such a system of conveyance of parcels as is contemplated in this article, unless it should be established by the post-office department. But if it should not be thus established, it may be authorised by act of Congress. Why should booksellers and printers, and publishers, be shackled in their business more than other classes of the community? A vast amount of the literature of the country is now periodical. We

have our weeklies, our monthlies, our quarterlies, and our annuals, without number. We have our libraries too; the Christian's Library, the Select Circulating Library, and a variety of others. It is desirable that there should be a regular and cheap conveyance of such books. This difficulty of distributing periodicals over the country is of the nature of a heavy duty on them. The postage on a periodical, which does not convey news, and needs not to be carried post haste, now greatly increases its cost, and checks its circulation. If shoes, and hats, and other articles of manufacture, could be conveyed only by government lines, at the cost of 33 per cent. on their value, the manufacturers would be exceedingly embarrassed; and the public, too, would be injured beyond calculation, especially if the manufacture could be carried on only in one place in a whole county, or in a whole state, as is the case with books and periodicals.—[Scientific Tracts and Lyceums.]

THE FLOATING GARDENS OF CASHMERE.—The city of Cashmere, being the capital of the province of that name in Asia, is situated in the midst of numerous lakes, connected with each other, and with the river Vedusta, by canals, separated by narrow lines and insulated plots of ground. Upon these lakes are floating gardens, cut off generally from the body of the lake by a belt of reeds; the cultivation of which is not only very singular, but highly profitable, and worthy of imitation in Europe as a resource for raising food for man. The second number of the Journal of the Geographical Society contains a notice of the Natural Productions and Agriculture of Cashmere, from which the following account is compiled:

The city of Cashmere is subject to considerable inundations, which have become annually more frequent, through the neglect of the government in not checking the accumulation of weeds and mud, which diminish the depth, and consequently increase the surface of the lakes. This has suggested the expediency of a floating support, by which vegetables are cultivated in safety, deriving as much moisture as is beneficial without the risk of being destroyed. Various aquatic plants spring from the bottom of the lakes, as water lilies, sedges, reeds, &c.; and as the boats which traverse those waters take generally the shortest lines they can pursue to their destination, the lakes are in some parts cut into avenues, as it were, separated by beds of sedges and reeds. Here the farmer establishes his cucumber and melon floats by cutting off the roots of the aquatic plants about two feet under water, so that they completely lose all connection with the bottom of the lake, but retain their situation in respect to each other. When thus detached from the soil, they are pressed into somewhat closer contact, and formed into long beds of about two yards breadth. The heads of the sedges, reeds, and other plants of the float, are next cut off, and laid upon its surface, and covered with a thin coat of mud, which, at first interrupted in its descent, gradually sinks into the mass of matted stalks. The bed floats, but is kept in its place by a stake of willow driven through it at each end, which admits of its rising and falling in accommodation to the rise and fall of the water. By means of a long pole thrust among the reeds, at the bottom of the lake, from the side of a boat, and turned round several times, a quantity of plants are torn off from the bottom, and carried in the boat to the platform, where the weeds are twisted into conical mounds, about two feet in diameter at their base, and of the same height, terminating at the top in a hollow, which is filled with fresh soft mud, and sometimes wood ashes. The farmer has in preparation a number of cucumber and melon plants, raised under mats, and of these, when they have four leaves, he places three plants in the basin of every cone or mound, of

which a double row runs along the edge of every bed, at about two feet distance from each other. No further care is necessary except that of collecting the fruit, and the expense of preparing the platforms and cones is very trifling. Mr. Moorcroft traversed about fifty acres of these floating gardens, growing cucumbers and melons, and saw not above half a dozen unhealthy plants; and he says, he never saw in the cucumber and melon grounds, in the vicinity of populous cities in Europe or in Asia, so large an expanse of plant in a state of equal health or luxuriance of growth. The general depth of the floating beds is about two feet, and some of them are seven feet broad. The season lasts for three months and a half, beginning in June. From the first setting of the fruit to the time of pulling, seven or eight days are the ordinary period. Thirty full-sized fruit from each plant, or from ninety to a hundred from each cone, are the average crops. The seed of the melon is brought annually from Baltistan, and the first year yields fruit of from four to ten pounds each in weight; but if the seed be re-sown, the produce of the second year exceeds not from two to three pounds. Unless when eaten to great excess the melon produces no disorders, and it is remarked that healthy people who live upon this fruit during the season become very speedily fat; and the effect upon horses fed upon this fruit is reported to be the same. In the early part of the season, cucumbers of full size sell at the rate of about three for a piece of coin of the value of a half-penny; but as the weather becomes hotter, and the plants get into full bearing, ten, fifteen, and even twenty, are purchased for this price. It is calculated that every cone yields a money return of about eighteen pence. Allowing sixpence for labor of every description, and including also the tax, the clear profit is a shilling for every two square yards. The yield of the melons numerically less, but the return of profit is at least equal. "No other vegetables are raised upon the spaces between the cones, although Mr. Moorcroft thinks that onions, cresses, and other useful vegetables, might be raised upon them; and water-mint grows spontaneously upon the floats.

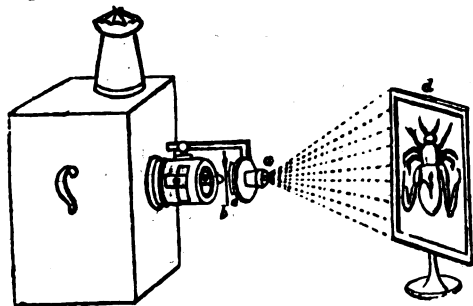
Cashmere, or Cassimere, is one of the northern provinces of India within the Ganges. It is surrounded by mountains, and from its beauty and fertility has been called the Paradise of the Indies. It contains upwards of 100,000 villages, is well stocked with cattle and game, and is said to be unmolested by beasts of prey. The people are ingenious, and resemble the Europeans in their persons, and the women are fair and tall. The famous Cashmere shawls derive their name from this country, though at present the supply that actually comes from it is comparatively small.

WHITE MONKEY.—A letter from Ramree of the 15th April, 1827, makes mention of a perfectly white monkey that had been caught there. The hair on the animal's body was white, curly, and soft as silk, and excited great wonder and admiration among the natives. They represented that such a creature had never but once, to their knowledge, been seen in those parts, and that the king of Ava sent down a golden cage, with a host of people, to escort the animal to his presence, and expended besides 20,000 rupers in sacrifices and public rejoicings, auguring from the arrival of the extraordinary stranger, the most happy presages of good fortune. The monkey brought to our correspondent was one of the same description, but unfortunately it was too young and tender an age when caught. A Burmese woman, who was nursing an infant of her own, requested permission to suckle it, and fairly divided her maternal attention between the two. Pug lived in apparent good health and spirits for six days, but whether it was that its nursing disagreed with it, or that it was naturally very delicate, it died on the seventh day.—[Mr. E. G. Ballard, Islington, in the Field Naturalist's Magazine, No. 9.]

On the Microscope—Method of Constructing, &c. [From Partington's British Cyclopaedia.]

[Continued from page 71.]

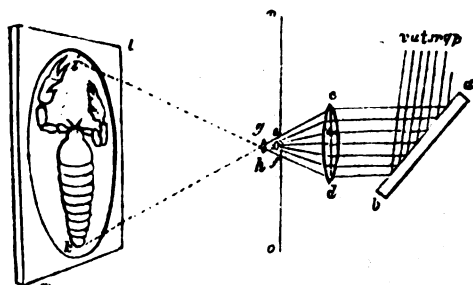
Another still more simple mode of effecting the same object is shown beneath:



The lantern is provided with a sliding tube for the introduction of the objects to be magnified. The moveable lenses are shown at *a*. Other objects differing in their character may be placed in the forceps, *b*, attached to the sliding frame by the plate *c*. A plate of ground glass, shown at *d*, serves to receive the figure of the object.

The mode of constructing the solar microscope may now be illustrated.

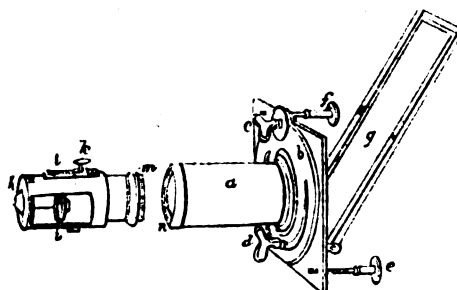
It is shown in its simplest form in the engraving below, in which *a b* is the diago-



nal mirror for receiving the rays of light, *p q r s t u v*. They are reflected by the polished surface, and thrown on the lens *c d*. Within the focus, at *e f*, is placed any transparent object to be magnified, and the image thus illuminated passes through the lens *g h*. The size of the magnified figure, *i k*, will depend on the distance the instrument is placed from the wall *l m*. The room should be darkened, which is usually effected by employing a large shutter at *n o*. Mr. Baker, speaking of this instrument, says, "that it has conveniences attending it which no other microscope can have: for the weakest eyes may use it without the least straining or fatigue. Numbers of people together may view any object at the same time, and by pointing to the particular parts thereof, and discoursing on what lies before them, may be able better to understand one another, and more likely to find out the truth, than in other microscopes, where they must peep one after another, and perhaps see the object neither in the same light nor in the same position. Those, also, who have no skill in drawing, may by this contrivance easily sketch out the exact figure of any object they have a mind to preserve a picture of, since they need only fasten a paper on the screen, and trace it out thereon, either with a pen or pencil, as it appears before them. It is worth the while of those who are desirous of taking many draughts in any way, to get a frame, in which a sheet of paper may be placed or taken out at pleasure; for, if the paper be single, the image

of an object will be seen almost as plainly on the back as on the fore side; and, by standing behind the screen, the shade of the hand will not obstruct the light in drawing, as it must in some degree when one stands before it."

A valuable solar microscope of the most perfect form is annexed.



The square plate *b c d* is attached to the window-shutter by the screws *e f*. The glass plate *g* is mounted in a brass frame, and may be elevated or depressed by a screw at *d*. A rotatory motion is communicated by a pinion and handle at *c*, which acts on a large wheel concealed by the square plate. The first lens is placed in the tube *a*, immediately adjoining the mirror. Another tube *m* is attached by a screw at *n*, and contains two small lenses, and the rack-work, *k l*, for adjusting the focus of the instrument. The objects are introduced at *i*; those best fitted for exhibition are the wings of insects, and the cuttings of wood. When glasses of high power are employed at *h*, they are now constructed on the achromatic principle.

We may now proceed to furnish our readers with some necessary particulars respecting the method of using microscopes. On this, Mr. Adams, in his *Essay on the Microscope*, has been very copious; with a view, as he informs us, to remove the common complaint made by Mr. Baker, "that many of those who purchase microscopes are so little acquainted with their general and extensive usefulness, and so much at a loss for objects to examine by them, that after diverting their friends some few times with what they find in the sliders which generally accompany the instrument, or perhaps with two or three common objects, the microscope is laid aside as of little further value; whereas, no instrument has yet appeared in the world capable of affording so constant, various, and satisfactory an entertainment to the mind."

In using the microscope there are three things necessary to be considered. 1. The preparation and adjustment of the instrument itself. 2. The proper quantity of light, and the best method of adapting it to the object. 3. The method of preparing the objects, so that their texture may be properly understood.

With regard to the microscope itself, the first thing necessary to be examined is, whether the glasses be clean or not: if they are not so, they must be wiped with a piece of soft leather, taking care not to soil them afterwards with the fingers; and, in replacing them, care must be taken not to place them in an oblique direction. We must likewise be careful not to let the breath fall upon the glasses, nor to hold that part of the body of the instrument where the glasses are placed with a warm hand; because the moisture thus expelled by the heat from the

metal will condense upon the glass, and prevent the object from being distinctly seen. The object should be brought as near the centre of the field of view as possible, for there only will it be exhibited in the greatest perfection. The eye should be moved up and down from the eye-glass of a compound microscope, till the situation is found where the largest field and most distinct view of the object are to be had, but every person ought to adjust the microscope to his own eye, and not depend upon the situation it was placed in by another. A small magnifying power should always be begun with, by which means the observer will best obtain an exact idea of the situation and connection of the whole, and will of consequence be less liable to form any erroneous opinion, when the parts are viewed separately by a lens of greater power. Objects should also be examined first in their most natural position; for, if this be not attended to, we shall be apt to form very erroneous ideas of the structure of the whole, as well as of the connection and use of the parts. A living animal ought to be as little hurt or decomposed as possible. From viewing an object properly we may acquire a knowledge of its nature; but this cannot be done without an extensive knowledge of the subject, much patience and many experiments; as in a great number of cases the images will resemble each other, though derived from very different substances. Mr. Baker, therefore, advises us not to form an opinion too suddenly after viewing a microscopical object; nor to draw our inferences till after repeated experiment and examinations of the objects in many different lights and positions; to pass no judgment upon things extended by force, or contracted by dryness, or in any manner out of a natural state, without making suitable allowances. The true color of objects cannot be properly determined by very great magnifiers; for, as the pores and interstices of an object are enlarged according to the magnifying power of the glasses made use of, the component particles of its substance will appear separated many thousand times further asunder than they do to the naked eye: hence the reflection of the light from these particles will be very different, and exhibit different colors. It is likewise somewhat difficult to observe opaque objects; and as the apertures of the larger magnifiers are but small, they are not proper for the purpose. If an object be so very opaque that no light will pass through it, as much as possible must be thrown upon the upper surface of it. Some consideration is likewise necessary in forming a judgment of the motion of living creatures, or even of fluids, when seen through the microscope; for, as the moving body, and the space wherein it moves, are magnified, the motion will also be increased.

On the management of the light depends, in a great measure, the distinctness of the vision; and as, in order to have this in the greatest perfection, we must adapt the quantity of light to the nature of the object, and the focus of the magnifier, it is therefore necessary to view it in various degrees of light. In some objects it is difficult to distinguish between a prominence and a depression, a shadow and a black stain; or between a reflection of light and whiteness, which is particularly observable in the eye of the libella, and other flies, all of these

appearing very different in one position from what they do in another. The brightness of an object likewise depends on the quantity of light, the distinctness of vision, and on regulating the quantity to the object; for one will be in a manner lost in a quantity of light scarcely sufficient to render another visible.

There are various ways in which a strong light may be thrown upon objects, as by means of the sun and a convex lens. For this purpose the microscope is to be placed about three feet from a southern window; then take a deep convex lens, mounted on a semi-circle and stand, so that its position may easily be varied; place this lens between the object and the window, so that it may collect a considerable number of rays, and refract them on the object or the mirror of the microscope. If the light thus collected from the sun be too powerful, it may be lessened by placing a piece of oiled paper, or a piece of glass slightly ground, between the object and lens. Thus a proper degree of light may be obtained, and diffused equally over the surface of an object, a circumstance which ought to be particularly attended to; for if the light be thrown irregularly upon it, no distinct view can be obtained.

On account of the sun's motion, and the variable state of the atmosphere, solar observations are rendered both tedious and inconvenient, so that it may be advisable for the observer to be furnished with a large tin lantern, formed something like the common magic lantern, capable of containing an argand lamp. There ought to be an aperture in the front of the lantern, which may be moved up and down, and be capable of holding a lens, by which means a pleasant and uniform as well as strong light may easily be obtained. The lamp should likewise move on a rod, so that it may be easily raised or depressed. A weak light is best fitted for viewing many transparent objects, among which we may reckon the prepared eyes of flies, as well as the animalculæ in fluids. The quantity of light from a lamp or candle may be lessened by removing the microscope to a greater distance from them, or by diminishing the strength of the light which falls upon the objects. This may very conveniently be done by pieces of black paper with circular apertures of different sizes, and placing a larger or smaller one upon the reflecting mirror, as occasion may require. The light of a lamp or candle is generally better for viewing microscopic objects than day-light, it being more easy to modify the former than the latter, and to throw it upon the object with different degrees of intensity.

With regard to the preparation of objects, Swammerdam has, in that respect, excelled almost all other investigators who either preceded or have succeeded him. He was so assiduous and indefatigable, that neither difficulty nor disappointment could make the least impression on him; and he never abandoned the pursuit of any object until he had obtained a satisfactory acquaintance with it. Unfortunately, however, the methods he made use of in preparing his objects for the microscope are now entirely unknown.

For dissecting small insects, Swammerdam had a brass table, to which were attached two brass arms, moveable at pleasure. The upper part of each of these vertical arms was constructed in such a manner as

to have a slow vertical motion, by which means the operator could readily alter their height. One of these arms was to hold the minute objects, and the other to apply the microscope.

The lenses of Swammerdam's microscopes were of various sizes as well as foci. His observations were always begun with the smallest magnifiers, from which he proceeded by progressive steps to the greatest.

The minute scales or feathers which cover the wings of moths or butterflies afford very beautiful objects for the microscope. Those from one part of the wing frequently differ in shape from such as are taken from other parts; and near the thorax, shoulder, and on the fringes of the wings, we generally meet with hair instead of scales. The whole may be brushed off the wing upon a piece of paper, by means of a camel's hair pencil; after which the hairs can be separated, with the assistance of a common magnifying glass.

Great difficulty is experienced in dissecting properly the proboscis of insects, such as that of the gnat, and the experiment must be repeated a great number of times before the structure and situation of the parts can be thoroughly investigated, as the observer will frequently discover in one what he could not in another. The collector of the bee, which forms an exceedingly curious object, ought to be carefully washed in spirit of turpentine, by which means it will be freed from the unctuous matter adhering to it; when dry, it is again to be washed with a camel's hair pencil, to disengage and bring forward the small hairs which form part of its microscopic beauty. The best method of preparing the stings of insects, which are in danger of being broken, from their hardness, is to soak the case and the rest of the apparatus for some time in spirit of wine or turpentine; then lay them on a piece of paper, and with a blunt knife draw out the sting, holding the sheath with the nail of the finger, or any other blunt instrument; but great care is necessary to preserve the feelers, which, when cleaned, add much to the beauty of the object. The beard of the *lepas antifer* is to be soaked in clean soft water, frequently brushing it while wet with a camel's hair pencil; after it is dried, the brushing must be repeated with a dry pencil, to disengage and separate the hairs, which are apt to adhere together.

The eyes of insects in general form very beautiful and curious objects. Those of the libellula and other flies, as well as of the lobster, &c. must be cleaned from the blood, &c. after which they should be soaked in water for some days: one or two skins are then to be separated from the eye, which would be otherwise too opaque and confused; but some care is requisite in this operation, for, if the skin be rendered too thin, it is impossible to form a proper idea of the organization of the part. In some substances, however, the organization is such that by altering the texture of the part, we destroy the objects which we wish to observe. Of this sort are the nerves, tendons, and muscular fibres, many of which are viewed to most advantage when floating in some transparent fluid. Thus very few of the muscular fibres can be discovered when we attempt to view them in the open air, though great numbers may be seen if they be placed in water or oil. By viewing the

thread of a ligament in this manner we find it composed of a vast number of smooth round threads lying close together. Elastic objects should be pulled or stretched out while they are under the microscope, that the texture and nature of those parts, the figure of which is altered by being thus extended, may be more fully discovered.

To examine bones by the microscope, they should first be viewed as opaque objects; but afterwards, by procuring thin slices of them, they may be viewed as transparent. The sections should be cut in all directions, and well washed and cleaned; and, in some cases, maceration will be useful, or the bones may be heated to a high temperature, in a clear fire, which will render the bony cells more conspicuous.

AGRICULTURE, &c.

[From the New-York Farmer.]

CULTIVATING THE MULBERRY.—The following, we believe, is from "Goodsell's Genesee Farmer":

So well are we satisfied with the result of our experiments, and that it is unnecessary to go through with all the routine of first sowing the seed in beds, and then transplanting the trees from the seed bed to the nursery, and from there to the orchard, then to wait for them to become firmly rooted, and to expand their tops, before worms can be fed from them, that we design next spring to sow another pound of seed, from which we hope to raise from eighty to one hundred thousand trees, from which to feed from until our orchard shall arrive at maturity, and ultimately to transplant the young trees into hedges, which for large establishments are no doubt preferable to standard trees, as it facilitates the gathering of leaves, and renders the whole less expensive. We are fully confident that every seedling tree one year old is capable of furnishing food for one worm, or producing one cocoon; if so, the greatest obstacle to the immediate introduction of this branch of domestic manufacture is removed, and instead of waiting many years, and incurring heavy expenses in the cultivation of trees, before the manufacture of silk can be commenced, or any returns had from the investment, it requires no more time than is necessary to clear off a piece of land, and obtain a crop of wheat, and we are satisfied that the same labor bestowed will yield a richer harvest. I am, sir, yours, &c.

EDWIN STANLEY.

Adams' Basin, Nov. 12, 1833.

HOPS.—A gentleman from Germany informs us that American hops have been tried in that country and obtained a decided preference to the English; and that an increased demand from that quarter may be looked for hereafter.—[N. Y. Shipping List.]

A METHOD OF REARING EARLY PEAS AND OTHER VEGETABLES.—An English gardener states that "the method of rearing peas in pots and boxes, in hot-beds and hot-houses, and afterwards transplanting them out into open ground, is a common practice with gardeners, and often succeeds very well, particularly if they are not too long in transplanting them; but I would recommend a method not so well known, as far preferable to that of pots and boxes, particularly when they are to be raised in a hot bed. This consists in having a quantity of turf cut in pieces, of about nine or ten inches long, and three or four broad, which are placed in a regular manner over the surface of the hot-bed, grass side downwards, and a row of peas is sown upon each row of turf, and afterwards covered with soil; when they are fit for transplanting, no more is required than to lift out the turf, piece by piece, with the peas

growing upon it, and place them where they are to produce their crop. By this means the roots receive no injury, nor do the plants sustain the least check in transplanting. This method may be practised with similar success in the raising of potatoes, beans, &c."

Culture of the Mulberry. By the Editor.

The White Mulberry, *Morus alba*, a native of Asia, was introduced into Italy by the survivors of the last crusade. It was cultivated extensively in that country, and early in the sixteenth century carried into France. This is the species principally cultivated in the United States for feeding the silk-worm.

SOWING AND TRANSPLANTING.—It can be propagated by seeds, cuttings, layers, or suckers. The seed, which may be obtained at any respectable seed-store, should be fresh and plump. Choose a rich piece of ground, and, if convenient, a sheltered situation in the garden. Let it be well dug and pulverised with the spade. Sow the seed the latter part of April, or early in May, in drills from eight to twelve inches apart, and cover them to the depth of half an inch, working the soil with a spade, hoe, or roller. In ten or twelve days the young plants will begin to make their appearance above ground. By soaking the seed some twenty-four hours before sowing, in rain water, their vegetation may be hastened. The young plants should be kept free from weeds, and occasionally hoed between the drills. If too thick, they should be thinned when about three or four inches high, by taking some of them up with a dibber, or a chisel-shape board, leaving the remainder near a foot apart. If this is not done in a rainy day, the drills or rows should be well watered, that the young plants may be taken up with as much earth adhering as possible, and kept in a moist state until they are transplanted into fresh dug earth. If the tap root is cut off, when they are raised, it saves handling.

In the fall, before the plants cease growing, cut off the long tap roots of those that have not been transplanted, by thrusting into the ground a sharp spade, care being taken not to cut them off too short. Those that have had a vigorous growth may, if more convenient, be transplanted into their permanent places in the fall, or succeeding spring. Generally, however, it is recommended to transplant them into a nursery, in rows fifteen to twenty inches apart, where they remain to obtain the growth one, two, or three seasons. Whenever they are removed from the seed beds, or from the nursery, much care should be taken to preserve the soil around the roots, that the fibres may not be injured, or exposed to the sun or dry air. The soil where they are intended to remain permanently should be rich and well pulverised.

When intended for hedges, they are taken from the seed beds after the first season's growth, cut down to about six inches, and then set out in the hedge rows. If cattle are kept from the hedge for three or four years, they will make it grow the thicker by browsing the limbs.

The seeds are sometimes sown in the fall, immediately after ripening. If the winter is mild and uniform, they will succeed, and thus enable the grower to gain the greater part of the season.

One ounce of seed should, if good, produce from five to ten thousand seedling plants.

The proper soil for the mulberry is that free from excess of moisture: a dry, sandy, or stony piece of ground produces leaves congenial to the health of the worm, and productive of good silk.

CUTTINGS AND LAYERS.—Even the first spring after the seed has been sown, the plants will supply wood sufficiently ripened for a large number of cuttings. They should be from five or six to ten or twelve inches long, and put in the ground nearly half their length. A soil retentive of moisture, and made pretty rich with fermented, particularly cow manure, and in a situation rather shady than otherwise, adds much to the certainty of the success of the cut-

tings. They may be put at distances most convenient for the grower; in rows that will enable him to hoe them. If the weather, before they are well rooted, be dry, they should be frequently watered.

The white mulberry is also propagated by layers, by bending those limbs nearest to the ground, and fastening in the usual manner the bend some four or six inches under the ground; or a sizable plant may be bent over, nearly flat on the ground, by loosening the earth on the opposite side with a spade. In this way almost every branch will serve for a layer. They may be cut from the parent stock the first or second spring after having been layed.

THE CHINESE MULBERRY.—The *Morus multicaulis*, Chinese mulberry, was, we believe, first introduced into this country by the late Andrew Parmentier, of Brooklyn, in the year 1828. It has since been greatly propagated, and is rapidly extending over the country. As far as experiments have been made, it promises not only to be a rival of the white mulberry, but to supersede it.

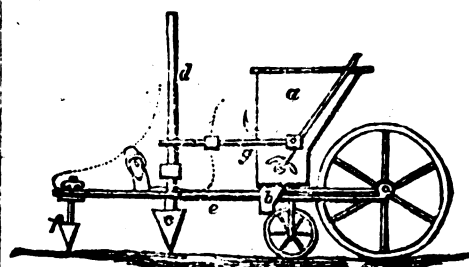
Its advantages are its very large leaves, affording a much greater amount of food for the worms; its being a tree of much less height rendering the gathering of the leaves not so laborious, and the ease with which it can be rapidly propagated by layers and cuttings. It is thought to produce silk equally as good, if not superior to that from the white mulberry. For hedges, it is supposed to be admirably adapted, from its disposition to send up numerous suckers, and from the richness and beauty of its foliage. The rapidity with which it throws out new leaves during the growing season, renders it a valuable plant for the rearing of two crops of cocoons.

PROPAGATION.—It is generally increased by layers. A plant of one or more years' growth is bent over, in the spring, or early summer, by loosening the earth; the limbs are extended and firmly secured in the ground by pegs or crotchets. The whole plant and the branches are covered over with the soil to the depth of about an inch. If the soil is rich, a young shoot will rise from almost every joint, and obtain a growth of three to six or eight feet the first season. In the succeeding fall or spring they may be divided into separate plants, and transplanted.

If the soil is very rich, the young plants making a vigorous growth, the wood does not always ripen sufficiently to stand the winter of the Northern parts of the Eastern States.

DIBBLE.—It is very probable that increased attention will be given in this country to planting and sowing in rows. We give the accompanying engraving from the British Cyclopædia.

This is an agricultural implement employed in making holes in the ground for setting grains, plants, and other sorts of crops in which are planted in rows. Their form, and the materials of which they are made, differs according to the nature of the crop which is to be put in or planted out by them; but for grain they are mostly shod with iron. In some cases they have likewise a sort of step for setting the foot upon, in using them. When employed, they are thrust into the ground to a depth suitable to the crop which is to be put in by them, and holes thus formed, into which the seeds, sets, or plants, are put by the hand.



We give the above engraving of a dibble act-

ing by the foot as already described; a represents the depository for the seed, &c.; the discharge valve is shown at b, the opening and shutting of the hopper being by a double lever, g, resting against the heel above, e; the dibble-iron and guide is shown at c f."

REPORT OF LIVE HEDGES.—The "Massachusetts Society for the Promotion of Agriculture," in the view it was their duty to take of those objects to which public attention might be beneficially invited, have thought that, in the progress of the culture and improvement of the country, Live Hedges would, in many places, become highly important and even necessary, where stone is not to be had, and timber, as must soon be the case, shall become more valuable for other uses. The beauty, permanency, and efficacy of this mode of enclosure is, with foreigners and many of our own countrymen, becoming a subject of taste and admiration. It is not our intention to deny the efficacy or expediency, in most places, at present, of a good rail fence, or, what is better, a strong stone wall. But, as our divisions of land multiply, these materials, in many places, will become more scarce and difficult to be had. As this shall occur, the introduction of live hedges will come into use here, as they prevail elsewhere. A gradual introduction of them must be useful, and add a verdure and beauty to the face of the country as its cultivation increases. Under this impression, the trustees of the Massachusetts Society were induced to offer a premium of \$30 for the best hedge, not less than 100 rods, which shall be in the most thriving state in 1833.

On this subject the committee on live hedges have a pleasure in presenting to the public the following communication of E. Hersy Derby, Esq. It will be seen that he has, by well-tryed experiment, established the perfect adaptation of the Buckthorn (or *Rhamnus Catharticus*) to our climate, as well as its preference over several other plants.

They therefore unanimously award to E. Hersy Derby, Esq. the premium proposed or \$30, for his hedge, of upwards of 100 rods, and recommend that his detailed and useful communication on this subject be printed.

By order of the Committee,

JOHN WELLES, Chairman.

Salem, Nov. 30, 1833.

The Committee on Trees and Live Hedges.

Gentlemen,—Please consider me an applicant for the premium offered by the Society for the best buckthorn hedge, not less than 100 rods, which shall be in the most thriving state in 1833. On measuring mine, I find I have over 118 rods of the buckthorn hedge, which I have reason to think would be considered at least equal to any in this country.

The trustees generally have examined the state of it the present season. Should it be thought proper, I will make a few observations on my experiments in hedging.

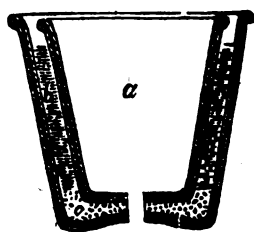
I have been for a great many years fully convinced of the superiority of live hedges for efficacy and economy. I began by setting out my first hedge about thirty years since, of the English hawthorn; the result was far from satisfactory; the plant, being not adapted to our climate, is injured by our summer droughts; frequently experiences blight early in August, and, by the first of September, assumes a wintry appearance. My next experiment was with the three-thorned acacia: to this hedge I devoted the most careful attention; but the result was equally unsuccessful. The plants run up without interlacing, and the thorns growing only upon the upper branches, the stems below were not thick enough to serve as a fence; it was beside too tender a plant to bear our severe winters. I also tried the crab-apple with but little better success. About 1808, there was standing in the garden of the venerable Dr. Holyoke, of this town, which adjoined that of my brother, a large tree of the buckthorn or *rhamnus catharticus*. In digging the latter, the gardener found several young plants, which

had grown from seed shed by this tree. They were given to me and set out in a nursery; finding they grew very rapidly, I was induced to set them out for a hedge some time in 1809, and in this attempt I was entirely successful. The length of this hedge is about 20 rods; has been a good fence over 20 years, and is, at the present time, in a fine, healthy state, not a single plant having failed since it was first set out. It presents a mass of verdure from early spring until late in the autumn, and is completely impervious, affording entire protection to the land it incloses. It being my first experiment with the plant, I did not head it down so low when young as I have since found it advisable to do; the consequence is, that it is not so thick at bottom as any of my others set out since. Finding it so hardy a plant, and so well adapted for hedges in our climate, I have been induced to cultivate it very extensively, and have, at different periods, extended my hedges until they measure nearly 120 rods in length.

The method I should recommend in setting a hedge, would be to place the plants in a single row, about 9 inches apart, either in the spring or fall of the year; if in the fall, I should clip it the next spring, within six inches of the ground, which will cause it to be quite thick from the bottom; any after-pruning can be made to suit the pleasure of the cultivator. I have also tried plashing; it was recommended to me in 1818 or '19, by my gardener (an Englishman), and I allowed him to try it upon a young hedge of crab-apple; but the hedge never flourished afterwards, and I, at last, pruned away the branches he had interwoven, and lost four years' growth by the experiment. I have never found plashing necessary for the strength or beauty of the buckthorn hedge, the natural growth of the branches being sufficiently interlaced. Three years' careful management in the way I have described is sufficient to form a perfect hedge, nearly as thick below as above. I am, gentlemen, very respectfully, yours, &c.

E. HERBY DERBY.

DOUBLE POTS FOR MARSH AND TENDER PLANTS.—You will perceive that this double pot is formed by simply placing one pot within another, the latter being a size larger than the former, and uniting them at bottom with a little Roman cement. The holes in the bottoms of both plants must be opened with a stick before the cement stiffens; otherwise, of course, the water in the inner pot could not escape.



In the figure, *a* is the inner pot; *b*, the vacuity between the two pots; and *c*, the cement which unites them at bottom. By keeping the vacuity between the pots (*b*) filled with water, the smaller or inner pot (*a*) will absorb moisture sufficient for the nourishment of the plant, provided the material of the pot be not too hard burnt; the water between the pots can at any time be emptied out, and the outer pot will then act as a shade for the roots of the plant in hot dry weather.

In my humble opinion, if a cheap and simple method could be found for shading pots exposed to the sun, we should not have so many sickly scorched-looking plants in the summer season. I am not aware of any pots having been made on the above principle.—[Thos. Blair, Stamford Hill, June 22, 1853.]

This mode of equalizing the moisture and temperature of the exterior side of pots is, as far as our experience goes, quite new; and, certainly, it appears well adapted either for growing marsh plants, by filling the interstices

between the pots with water; or delicate plants, easily killed either by too much water or by neglect of water, such as cape heaths, by using moist moss instead of water. Many persons find it very difficult to keep heaths in warm rooms, even during the short time they are in bloom, without either over-watering them, or keeping them too dry; Mr. Blair's pot, either with water or moss, would be an effectual remedy.—[Gardener's Magazine.]

WATERING PLANTS IN THE OPEN GROUND.—A mode of supplying plants growing in the open soil with water, during dry intervals of summer, practised by the Rev. Geo. Reading Leathes, of Shropham, Norfolk, deserves to be made known; and may, although it has nought of parallelism or likeness to Mr. Blair's, farther than its relation to supplying water, be described here. Soil dried to dustiness resists water; and not every assistant whom one may request to water the plants, which may be languishing in the garden, will take the patient and honest pains to give them the thorough soaking they require. When the soil about a plant or plants is dried to dustiness, the moistening it by watering requires that water be applied in a small quantity at a time, and repeatedly. The doing this occupies much time; yet you must either do this, or open with a spade, at the foot of the plant, a hole that will receive at once a larger supply of water; and this latter mode has the effect of leaving the gully hole, as it may be termed, and the earth which had been taken out of it, exposed to view: an offensive sight to those who have a passion for evenness of surface in the soil of their gardens. Mr. Leathes practises neither of these modes; but, as an equivalent to both, sinks into the soil, at the foot of the plant requiring water, a flower-pot, immersed to the half or whole of its height or depth, with its size proportioned to the quantity of water which the constitution of the plant may indicate it to need, and with the drain hole of the pot left open at the bottom. When each of the plants most liable to injury from drought has received the apposition of a flower pot sunk at its base, the watering of all these plants is thenceforth effectible with an increase in the rate of despatch, quite or more than equivalent, in a drought of some duration, to the first expenditure of time and trouble: besides, too, the valuable satisfaction supplied to him who takes this trouble, of feeling conscious that every plant receives the whole, and directly to its roots, of the quantity you may please to pour into the sunk flower-pot; through the drain hole at the bottom of which the water passes at a rate determined by the degree of absorbency in the soil, without detaining him who supplies it until it has soaked away.—[Loudon.]

BLOOD MANURE FOR THE VINE.—The vine is manured with bullock's blood in autumn, and the shoots are laid down and covered with dry leaves; by which they are protected against severe frosts, and also in the beginning of spring against those fine days which occasion their early vegetation. They are pruned in spring after the leaves are removed.—[Baron Kottwitz, in Loudon.]

THE PROPAGATING OF CABBAGES BY SLIPS AND CUTTINGS.—The first shoots only are applicable to such a purpose; the second run to seed. [Maund's Botanic Garden, June, 1853.] This fact, one of some consequence, is stated by Mr. Maund, on the cover of his number of the Botanic Garden for September, to be supplementary to the information on this subject in pp. 126, 127, and to have been communicated to him by the author of that article, Peter Kendall, Esq.

SUGAR IN SOUPS.—A London paper says, "Sugar is now becoming a universal ingredient in many of our soups in ordinary use, such as soup crisis, gravy soup, &c., being found to add greatly to their flavor and wholesomeness."

NEW-YORK AMERICAN.

FEBRUARY 15—21, 1854.

LITERARY NOTICES.

No. XV.

Marshall, (Calhoun Co.) M. T., Dec.

I confess that it was with some pleasure that—after dividing my time for several days, as described in my last, between roads rendered almost impassable by continual snows and log cabins, where the recent settler, however hospitable, had but spare accommodation to offer to the passing traveller—it was with some pleasure that on rising an elevation on the northern bank of the Kalamazoo, I saw a large frame building, which was evidently a tavern, rearing its comfortable looking chimneys above a group of log huts on the plain beneath. My horse, who had doubtless repented of former escapades in the companionable intercourse which had now for some time subsisted between us, seemed to sympathize in the feeling; and pricking up his ears, as he snuffed the grain in a flour mill directly beneath us, we descended the slippery height, and were soon tolerably well housed in the new Inn of Marshall. The house was indeed not as yet plastered inside; and the different bed-rooms, though lathed, seemed divided from each other rather by lines imaginary than real. But the bar-room wore already the insignia of a long established tavern in an old community; and apprized me at once, by the placarded sheriffs' notices, and advertisements for stolen horses, grain to be sold, and laborers wanted, which indicate the growth of business in country life, that society was in a pretty mature state—at least six months old—in the county town of Marshall. I was therefore not at all surprised to find among these notices a call for "a Railroad Meeting" in the evening—especially as nearly 18 months had elapsed since the first white man erected his cabin in this section of the country.

The meeting, which might be termed a crowded one, was conducted with more animation than unanimity. There were several very intelligent men present, however, and I listened with interest to their exposition of the resources of this section of Michigan, which, as a wheat growing country, may be justly compared to the celebrated Genesee valley of New York, while the soil, as I have heard it well observed by a resident, "unlike the heavily timbered land of the Eastern States, instead of wearing out one generation in subduing it for the purposes of the husbandman, invites the plough at once." Nor, if a railroad should be constructed from Detroit to the mouth of the St. Joseph's, passing through the counties of Wayne, Washtenaw, Jackson, Calhoun, Kalamazoo, Van Buren, and Berrien, do I think it would be too bold to assert, that the amount to be transported by the time the work was completed would be equal to one million of barrels; which is a less estimate by two hundred thousand than I have seen given by an intelligent writer on this subject, in a Detroit paper. The route thus designated I am persuaded, is the right one for a Railroad; though, should a different mode of communication be determined upon, it would be difficult to decide whether it were most expedient to construct a Canal from the Falls of Grand River to Detroit, or from the navigable waters of the St. Josephs to Monroe. I do not hesitate to add that before two years have expired, all of these routes will be under contract. The abundant resources of Michigan are developing so rapidly, that they will shortly require all these outlets; and in a country where you may drive a barouche and four for hundreds of miles in any direction through the woods, the expense of constructing more artificial ways will be comparatively trivial. Did I not know how ignorant generally the people of the East are of the resources and condition of this country, it would surprise me that some New York capitalists have not embarked in some of these

works. A prodigious speculation might be realized by laying out a Railroad on one of these routes above described; having first purchased the land in its vicinity at Government prices, to be disposed of afterward when its value should be enhanced by the completion of different sections of the work. The ingenious writer above alluded to, has already suggested this mode of covering the expense of such an undertaking. You can have no idea of the feeling existing on the subject of internal communications throughout Michigan; and it would amuse you not a little to witness the heart-burnings and jealousies on the subject which pervade a country but just beginning to be populated. The rapidity with which people establish themselves, and collect the indications of agricultural wealth around them, before they have even the ordinary comforts of life, will, in a great measure, account for their looking thus ahead and quarrelling about the game before it is hunted down. The farmer who has more grain in the sheaf stacked in the field than he can accommodate in his barn, is naturally more eager to find the means of sending a share of it to market. I was quite diverted at the turn matters took at the meeting which suggested these remarks, when a discussion in relation to the various routes to be recommended to Government in case they should consent to make a railroad through the Peninsula, became unpleasantly warm. "This pother reminds me Mr. Chairman," said an old pioneer, "of two trappers, who, in planning a spearing expedition for the next day, quarrelled about the manner in which a turtle which they proposed taking, should be cooked for their supper after the days sport was over. An old Indian happily settled the difficulty by proposing that they should first catch the turtle! Now, sir, as this railroad"—"The case is not at all parallel," interrupted a still more ancient speaker, "for Nature has already caught the turtle for us. She meant the railroad to pass right along here and no where else."

The councils of the meeting were not on the whole, so harmonious as I could have wished from the courtesies offered me after its termination by the adherents of the two parties of Guelphs and Ghibbelins which distract the unborn city of Marshall. But it was surprising to a stranger upon looking round at the hovels of mud and logs, which as yet occupy its site, to find so many persons of intelligence and refinement thus collected in their precincts. The population of Michigan generally, as I believe I have before observed, is much superior in character to the ordinary settlers of a new country. The ease with which a man can here support a family as a farmer, induces a great many persons of all professions in other States to abandon their former pursuits and become tillers of the soil. The alteration of life I should judge by the contentment I everywhere witness, is almost always for the better.

I have met with several dispeptics who have been completely cured of that horrible disease by their change of life. With such, health is a sensation—a positive delight; and in duly estimating the blessing, they of course were ever ready to praise the conditions upon which they enjoy it. Others again bred up in a city, find in the indulgence of that love of rural life, which, when it is a natural taste is inextinguishable, an ample compensation for breaking up established habits and associations. The majority again are men of slender means; and while the necessity of attending practically to the subsistence of their families keeps them employed, the want of pecuniary resources prevents their embarking in the thousand idle schemes which tend so often to the chagrin and the ruin of "gentlemen-farmers." But the main cause of Michigan being settled by such respectable people, remains yet to be mentioned. It is that no one can take up an acre of land without first paying cash for it at one of the three land offices of the territory.

The whole surface of the Peninsula has either been, or is now being, surveyed into townships of six miles square. These again are subdivided into sections of a mile square; which sections are again cut up into lots of forty acres; which is the smallest quantity of land that can be taken up from the Government. The price is invariably \$1 25 an acre. When you consider, therefore, that every emigrant who means to locate, (this is a sound American word, and as indispensable in the vocabulary of a western man as are an axe and a rifle among his household furniture) must, however poor, have some earnings in advance to purchase the spot upon which he is to live; and to bring his family to such a remote distance it will be easy to conceive that the industrious and the enterprising must constitute the largest portion of such a population of freeholders. The prosperity of a whole community, composed of such aggregate masses, may be safely predicted; and though one sometimes meets with those whom the first process of accumulating renders discontented and induces to speak ill of the country, yet in general I may say, that the pride of a Michigian in the beautiful land of his adoption, is as strong as the home-feeling upon which the citizens of some of the older States pique themselves. As for the sickness which always prevails more or less among the new settlers, to one who is aware of their imprudences, the wonder is that the majority of them escape with their lives. Think but of people setting themselves down on a soil of twenty inches in depth, and in the month of June when the weeds and wild flowers oer-top the head of the tallest man turning over the rank soil immediately around their dwellings, and allowing the accumulation of vegetable decomposition to be acted upon by a vertical sun, and steam up for months under their very nostrils; and yet this, I am told, is continually practised by settlers who come in late in the season, and are anxious still to have a crop the first year. Here, as in the case of those settlers, who, for the sake of the wild hay, locate themselves near the great marshes, imprudence alone is manifested; but the charge of culpability will justly attach to some other cases, when nuisances, not before existing, are created by the owners of property. I allude to the practice, expressly prohibited by the laws of Michigan, of flooding land while constructing mill ponds without removing the green timber growing upon the spot. So pernicious is this to the health of the neighborhood, that it affects very sensibly the value of property near the new pond, and yet in their eagerness to have mills erected, and aid the market of their overflowing granaries, the new inhabitants overlook entirely the gross violation of their laws and the melancholy consequences which ensue to their families. Another cause of sickness is drinking the water of springs or rivers which head in marshes, and are of course impregnated with their baleful properties, instead of digging wells where water is not liable to such exception. As for general healthfulness of situation, I believe it is agreed that the banks of the small lakes which so abound in the Peninsula, are—when these transparent bodies of water are surrounded by a sand beach, which is the case with about a third of them—by far the healthiest. They are fed generally by deep springs, and almost invariably are supposed to have a subterranean outlet, while so beautifully transparent are their waters, that the canoe suspended on their bosom seems to float in mid air. These lakes abound with fish, and in some of them of only a few acres in extent, fish have been taken of forty pounds weight. They generally lie embosomed in the oak openings, and with their regular and almost formal banks, thus crowned with these open groves, these silver pools might be readily taken for artificial trout ponds in a cultivated park. I need hardly add, that it is necessary to diverge, as I have, from the route generally travelled, to see these scenic

gems, so numerous, lonely, and beautiful. Not one in a hundred has a settler on its banks, and I confess I take a singular pleasure in surveying these beauties, as yet unmarred by the improving axe of the woodman, and unprofaned by the cockney eyes of city tourists; nor would I change my emotions, while ranging alone over the broad meadows, traversing the lofty forests, or loitering by the limpid lakes of Michigan, for the proudest musings of the scholar that revels in classic land. It may argue a want of refinement in taste, but I confess that a hoary oak is to me more an object of veneration than a mouldering column, and that I would rather visit scenes where a human foot has never trod than dwell upon those gilded by the most arrogant associations of our race.

What are the temples which Roman robbers have reared? what are the towers in which feudal oppression has fortified itself? what the blood stained associations of the one, or the despotic superstitions of the other, to the deep forests which the eye of God has alone pervaded, and where Nature, in her unviolated sanctuary, has for ages laid her fruits and flowers on his altar? What is the echo of roofs that a few centuries since, rung with barbaric revels, or of aisles that pealed the anthems of painted pomp, to the silence which has reigned on in these dim groves, since the first fiat of Creation was spoken?

I shall diverge from my western course tomorrow, a few miles southward, in order to visit a groupe of lakes, near which a band of Pottawattamies, a tribe I have not yet seen, have their encampment. I will leave this letter open, in order to give you the result of my visit.

Pittsborpe, (Calhoun Co.) M.T. Dec. 23.

I write to you from a little cottage in a beautiful grove, not far from the banks of the Kalamazoo, where two young gentlemen, recently from the east, have erected their tabernacle in this land of enterprise. It is amusing to observe how little singularity people here attach to a mode of life, which, in older countries would be looked upon as highly eccentric. My entertainers are both young lawyers, liberally educated, and men of much accomplishment, and yet the house in which I am passing the night, with every article of furniture it contains, is of their own manufacture; saw, an axe, a wood knife, and a jack-plane being their only tools. It would amuse you not a little, to look through the window, and see our little groupe at this moment. One of my companions whose axe and rifle are suspended by wooden hooks to the rafters over his head, is professionally engaged in drawing a declaration at the table upon which I am writing; while the other having just got through removing the remains of our game dinner, prepared and cooked by his chums, is now sitting with a long pipe in his mouth, watching a coffee pot which steams up so fragrantly from the live embers, that no light consideration would induce me to part with the interest I have in its contents. Their house, which has been thus occupied for three months, is a perfect pattern of neatness, though as it consists of but a single room, no little ingenuity is required to arrange their books, house-keeping apparatus, and sporting equipments, so as to preserve even an appearance of order in such a banbox. They have already sufficient business, they tell me, to sustain their moderate household; and as the Indians supply them with abundance of provisions, they have ample leisure to devote to study. It is far from uncommon, however, to meet thus with persons of finished education, and accomplished manners under as humble a roof as this in the wilds of Michigan. For so rapid is the growth of society here, that he who aims at a prominent station in the new community, must be a pioneer far in advance of the growing settlements. Two years ago the first white man raised his log hut in the county of Calhoun, it has now a population of 1500, and I have passed an eve-

ning in more than one mud-plastered wigwam, whose fair and elegant inmates would grace any society, however refined. I cannot help sometimes, when I see these fair young creatures, the wives and daughters of men habituated by early education to all the comforts and elegancies of refined life, thus submitting cheerfully to every privation for the sake of these whose happiness is involved with theirs, I cannot help involuntarily calling to mind the jargon of novels so often adopted by people of sense in cities, where the terms "excellent match," and "supporting in the station where she has been accustomed to move," usurp all considerations of mutual affection, and capability in the parties united to study each others happiness through life. I am more than ever persuaded that there are two kinds of refinement in life which bear but little similarity to each other, and the one least often met with is that which is independent of modes and fashions of tailors, milliners, and cabinet makers—which does not necessarily lean upon a pier table nor repose upon a *chaise longue*, which—shall I confess it? may be nursed without a silver fork. The purest porcelain which the factories of China produce does not require a single tint upon its surface to show the fineness of the texture, but that in which coarser clay is blended is always charged with some gaudy hue to hide the intermixture of the mongrel material. This doctrine though, is so little in accordance with those taught in the English novels, which constitute the modern text book of elegance, that while the mode of eating an egg is the test of good breeding, and the art of patterning French phrases the criterion of intellectual cultivation, I should as soon think of interfering with the particular province of a lackey or *friseur*, as breaking a spear at such disadvantage with Almacks and Captain Hamilton.

But a truce to this prosing. Did you ever see a *juniper*? A couple of hickory poles so bent that the runners and shafts are of the same piece, with a crate placed on four uprights, complete this primitive species of sledge, and when the crate is filled with hay and the driver well wrapped up in a buffalo robe, "the turn out" is about as comfortable a one as a moderate man could wish. In such a vehicle as this, with a harness every way suitable, viz: a collar of undressed deerskin and reins of rope, (the twisted bark of trees is often used) did I, with one of my present entertainers, the first companion I have yet had in travelling, sally out from Marshall this morning. My horse, who had detained me here a couple of days by a soreness of his back proceeding from the saddle, seemed highly to approve of this new mode of travel: Mr. Osbaldistone behind Tom Thumb, Sesostri in his chariot, or *Yorke* in one of Brower's new Omnibuses, could not have dashed off with more glee than did we with our merry jumper along the dimpling waters of the Kalamazoo; when lo, just as we had crossed a bridge of unhewn timber and were under full way through the oak openings, our frail barque struck on a rock hidden by the snow, and we were capsized and wrecked in an instant. Fortunately, though both were pitched like a couple of quoits from the machine, we were neither of us hurt; and my companion returning to the settlement to borrow a horse, I mounted mine, and leaving the remains of my crank establishment, where chance had thrown them, I rode on, while he overtook me in time to introduce me to his friend, and make me so pleasantly at home in their dwelling, as you must observe, I now am. Good night, I will tell you to-morrow evening how we dispose of our time till then.

December 24th.

The air was mild this morning, and large flocks of snow-birds twittering among the bur oaks, with the jays screaming from the woods, and the covies of grouse rising continually before us in the openings, made our route to the camp of Warpkesick more like a ride in the

spring-time, than a winter excursion. I was accompanied by my companion of yesterday; and as we were both well mounted we galloped over the openings towards Lyon lake, at a rate which brought us in a few minutes to the white sand beach which fringes that beautiful water. The marks of an Indian trail were here easily discernible; and following the foot marks dashed in the yielding sand, the frequent print of mockasons soon led us again away from the shore into a tall wood beyond. A morass that shook for yards around as our horses' hoofs would encounter the sagging peat, was next to be crossed; and then passing between two small lonely looking lakes, where a tall pine or two lifted its sweeping cone above the tapering tamaracks around, we struck at last into a dense forest. Here the numerous deer-runways, with the flocks of wild turkeys, and innumerable tracks of raccoons, wolves and bears, showed us that we were upon a favorite hunting ground of the Pottawattamies. As for the wolves they are little disturbed by the Indians, who consider them fair hunters like themselves, and privileged to go unmolested; they generally abound around a hunting camp; and soon grow fat on the offals of game slaughtered near it. But bears, though the successful hunter invariably takes his dead quarry by the paw, calls him his grandfather and asks his pardon for killing him, "being compelled to it by necessity," are hunted with great avidity; and you generally find a tamarac swamp, the favorite covert of these animals, in the vicinity of a hunting camp. We had ridden for about a mile through the heavily timbered land, when reaching the banks of the Nottawaseepee, a branch of the St. Josephs, I heard the sound of children's voices, and descried two or three red urchins wading through the shallow stream on stilts, while others of a similar age were amusing themselves in shooting bows and arrows on the opposite side. We immediately forded the stream, and making our way into a swamp, where the horses would sink to their knee at every step, came unexpectedly upon a piece of firm ground, some eighty yards in diameter, and found ourselves in the middle of the camp of Warpkesick. It was composed of three or four wigwams, only but they were large and probably contained several families each. They were constructed of mats, arranged in the form of a tent, and supported by uprights at either end, an opening being left in the centre for the escape of the smoke, and a blanket suspended over a hole cut in the side, supplying the place of a door. The day being mild for the season of the year the indwellers of these simple habitations were, at the moment of our arrival, variously occupied in several groupes on the outside. Some of the men appeared to be cleaning their weapons, and others were apparently engaged in arranging a bundle of muskrat traps—while one old fellow, whose screwed up features, peering from under a mass of grizzly locks, indicated the cunning of the trapper rather than the boldness of the hunter—was occupied in flaying an otter but just taken. The women were, however, the only ones who appeared to be assiduously engaged—the men having all a lounging air of indolence about them, incompatible with the idea of actual employment—dressing skins was the occupation of the former; and they each sat grouped like a hare in its form around a collection of boiling kettles, over which the skins were suspended. A tall virago of fifty, whose erect stature, elf locks, and scarlet blanket floating about her person, would entitle her to flourish as Meg Merrilies in the frontispiece of Guy Mannering, stood up in the midst and, had it not been for some tolerably pretty faces among her junior collaborators, might have been taken for Hecate herself, surrounded by the wierd sisters of the cauldron. A pack of wolfish looking curs, about twenty in number, completed the assemblage; which, when you take into consideration the variously colored

calico hunting shirts, and cloth leggings, in which the females had arrayed themselves, with the white, blue, red and green blankets in which the men were wrapped, constituted about as motley a collection as ever followed Falstaff to the field. Warpkesick himself, the chief of the gypsy band, issued from his lodge while I was thus studying the appearance of his adherents. He was a young man, not more than thirty, with a handsome though somewhat voluptuous cast of countenance and remarkably fine eyes. His stature was rather below the middle size; and though the upper part of his person was extremely well formed, with a deep chest and broad flat shoulders, one of his legs, whether from deformity or misfortune I did not like to inquire, was so twisted under his body as to be worse than useless. He supported himself upon an aspen staff, about eight feet in length, and terminating at the bottom in a round ball, to prevent it, probably, from sinking too deeply into the earth while in rapid pursuit of game; the chief being, in spite of the unsightly incumbrance he is compelled to drag after him, when bounding like a stricken panther, on his prey, one of the keenest hunters of his tribe. He received us courteously, but remained standing; while several Indians gathered in a few moments around him: after shaking hands with them all in succession, I took up a loaded gun, and by way of breaking up the formality of the meeting, desired an eagle-eyed young Indian to make a shot with it. He hesitated for a moment to comply, and immediately all the others from some whim or other insisted that I should shoot; our conversation being altogether in signs it was some moments before I understood their gestures; and I confess, that, having but little practice with a single ball, I was any thing but disembarassed when I came to understand the purport of the request they were proffering with so much animation. A small blaze that was instantly made with a tomahawk in a sapling, forty or fifty yards distance, left me no excuse for pretending longer to misunderstand my worthy acquaintances, and placing the gun to my shoulder I was as much surprised at putting the ball within a couple of inches of the centre, as if the tree had screamed when thus peirced by my random bullet. Having met with those in Michigan who will drive a rusty nail with a rifle at this distance and shoot leaves from each other heads at six rods, I could not account for the degree of approval manifested by the spectators till my companion informed me that the Indians, owing perhaps to the inferiority of their rifles, which are of English manufacture, are but indifferent marksmen at still objects. "*Tai-ya*," cried the women, "*Neeshin*," said the chief, and "*Neesheshin*," echoed his attendants; while the blankets of the lodges were now for the first time raised, and entering we stretched ourselves on mats around the fire. A youth of nineteen sprang to his feet as I removed the dingy curtain which formed the door, and revealed a face and form that might be the model of an Apollo. Being sick at the time he was but half dressed, the purple blanket dropping from his shoulders setting off a neck and chest of the finest manly proportions. His features were copied by nature from a Greek model; while his shaven crown, with the single chivalric scalp lock would in its noble developments have thrown the disciples of Gall and Spurzheim into ecstasy. The particularity of his head-dress, with the beautifully beaded leggings discoverable around his ankles, revealed to me at once, that the young gentleman was an Indian dandy—a Pottawattomie Pelham in an undress; and I assure you that Mrs. C— never schooled any of his New York rivals to wear their Spanish cloaks with a better air than was exhibited by my red friend Neeshwa-coquatchegon, or Three-garters, as he gathered the folds of his blankets about his person. Pipes were now lit, and Three-garters, who was too unwell to smoke himself, politely, after a few whiffs, tendering me his, while my companion, who could partially speak the language, was supplied from another quarter, we were soon perfectly at home; when, as I was trying to squeeze a tune from a species of flute, of imperfect tones, but having a rich mellow sound, after unsuccessfully attempting to purchase (the owner being absent) what I considered quite a remarkable Indian curiosity,

Warpesick rose suddenly, and stating that he had to start at once on a trapping expedition, signified that we should take our departure. An Indian pony stood at the door, and leaping at one bound into the wooden saddle, an immense bundle of steel-traps was handed to the Chief by a bystander, and, accompanied by an Indian on foot, almost as sorry-looking as the miserable beast he rode, our abrupt host disappeared at once in the woods. I was still trying to make terms about the flute, and had conciliated the squaws wonderfully by tearing out the silk lining of my frock coat, and giving it in shreds to their children, when my friend, being already mounted, told me we had better move off. I had barely time to cross the saddle, when a whoop rang through the woods, which, while it made my horse spring almost from beneath me would have wakened Rip Vanwinkle from his twenty years' doze. The piercing cry from the forest was echoed with an exulting shout from every wigwam. A dozen dusky figures leaped through their flimsy porches, and as many rifles gleamed in their hands. He of the heron feather was the first that caught my eye, and as his gun pointed in the direction whence the first whoop came, immediately behind me, I could not help, in spite of the undesirable propinquity of its muzzle, admiring the eagle eye and superb attitude of the young warrior. Not a soul advanced three paces from the covert whence he sprang. There was a dead silence. The children held their breath, and "Meg Merritties," who had stepped on a fallen tree at the first outcry, now stood so still that eldritch fumes, were it not for her elf locks, streaming over her scarlet blanket in the breeze, might have been mistaken for a creature of stone. Another whoop, and the cause of all the commotion at once appeared. A noble buck, roused from his lair by Warpesick, comes bounding by the camp, and buries his proud antlers in the dust in a moment. A dozen scalping knives pierce his leathern coat, and the poor creature is stripped of his skin almost before he has time to pant out his expiring breath.

I rode home reflecting upon all I had ever read of the want of vivacity and fire in the Indian character, and concluded that I would rather have witnessed the spirited scene I have just attempted to describe to you, than double all the knowledge I have hitherto laid up from such sources.

I leave this comfortable house in the morning, and it will be long before I reach again one half so agreeable.

H.

THE WRITINGS OF ROBERT C. SANDS, IN PROSE AND VERSE, with a Memoir of the author. 2 vols. 8vo. New York: HARPER & BROTHERS.—Those even who knew, or thought they knew, the extent of the acquirements and reach of the genius of Sands, will, we are persuaded, rise from the perusal of these volumes with increased admiration of his knowledge, taste and talents. The preliminary Memoir, understood to be from the pen of G. C. Verplanck, is written with a warm and affectionate interest in the fame of one who, though much his junior in years, had long been a literary associate and personal friend; and it presents an enumeration of his labors and acquirements and forms an estimate of his intellectual and moral qualities, such as to excite both wonder and respect.

Of the contents of these two handsomely printed volumes, much has appeared before. The leading prose article, however, in volume I. is now for the first time presented in an English shape—an historical Memoir of Hernan Cortez. This was prepared by its author in order to be prefixed to a Spanish edition of Cortez's letters, printed for South America, and was translated, as it was written, into Spanish. This memoir was written with care, and after consulting all the authors who could throw light on his subject, and it will be admitted to be an admirable sketch of the Conqueror.

We extract from the notice by Mr. Verplanck, a summary of the acquirements and character of Mr. Sands.

In ancient and modern literature, and languages, he had few equals, probably in our country no superior. He read familiarly the Greek, Latin, French, Spanish, Italian, and Portuguese authors. All the treasures of English literature, in the broadest sense of the word, were stored in his memory, from Chaucer to Charles Lamb, from Cudworth to Keefe. He had a general and more than ele-

mentary acquaintance with the mathematical and physical sciences, but for these branches of knowledge he felt little curiosity or interest. He held and maintained with Johnson, that the knowledge of external nature is not the great or the frequent business of the human mind,—that we have perpetual occasion for those principles of moral truth, and materials of reasoning or illustration, which are supplied by poets, orators, and historians, but are chymists or geometricians only accidentally or occasionally. He had laid a deep foundation of law learning in his youth, and though he abandoned the profession, he never quite gave up his legal reading. He was, therefore, probably as sound a lawyer as can be made without the actual and continued practice of the profession. His reverence for the law, and love of its peculiar learning and reasoning, led him to an extreme of prejudice against all reform or melioration of the system. He admired and defended even those narrow and inconvenient entrenchments which the ingenious and apologetic Blackstone himself allows are to be found among the spacious apartments of the ancient castle of English common law. He had, also, something of the same sort of dislike against the metaphysics of political economy, a study he never relished and never did justice to. He frequently maintained that it was not entitled to the honor of being called a science, and that "all the trash about values, and wealth, and reproductive industry was not of the slightest practical use." There was scarce any other part of knowledge which had not at some time excited his curiosity, and more or less engaged his attention. Hence his mind was stored with an immense mass of miscellaneous information; such as, if it is not learning, is often found much more useful. He had read extensively, though irregularly, in divinity and ecclesiastical history; and had settled his opinions on most of the contested points of theological discussion. His opinions seemed in general to be those of Taylor, Barrow, and the old divines of that school in the Church of England, which, however, he held with great moderation.

He revered religion, and all good and moral influences, wherever he found them to exist.

His large stores of learning and of practical information on men and things, could not have been accumulated without great activity and versatility of mind, and these he evinced in all his pursuits; for he possessed the power of vigorously directing the faculties of his mind to any chosen object of study, inquiry, or speculation. His fancy was surprisingly fruitful of original and striking combinations of ideas; and if his peculiar vein of humour had any fault, it was that of excessive and unrestrained exuberance. But he had none of that bitterness of spirit, or keenness of sarcasm which frequently give edge to satire. His indulgence in the laughable sprang from the love of the laugh itself. He had no touch whatever of the sneering misanthropy, or the contemptuous hatred for folly which have so often lent their savage inspiration to comic and satiric talent. His humour, as it overflowed in his conversation and letters, even more than in his written compositions, ran somewhat in the whimsically broad vein of Rabelais, (though quite free from his grossness) delighting like him to mix the topics and language of learning with the humours and phrases of humble or even of vulgar life.

It strikes me as a remarkable circumstance (whether common to him with any other learned wit, I cannot say) that with this buoyancy of imagination, this constitutional tendency to the jocose or the whimsical, all his favorite studies and literary recreations were of a very grave cast. He had early read most of the witty and comic authors of note, but rarely recurred to them in after life. When fatigued with business or literary labor, he did not as one might have expected, refresh himself with Swift or Smollet; admire the chivalrous fancies and noble horsemanship of La Mancha's knight, or "laugh and shake in Rabelais' easy chair"; but he returned with ever fresh delight to hold communion with ancient ages and scholars, or else

—entranced to hear
O'er battle fields the epic thunder roll;
Or flax where tragic wail upon the ear
Through Argive palaces shrill wailing stole.*

So too, all his deliberately selected subjects of composition were of a serious nature, generally demanding grave reading and research. His pleasure was all spontaneous, unpremeditated, unbidden.—Nor were his laughable associations ever applied to subjects worthy of higher thoughts, for quick as he was in his perception of the ridiculous, he was equal-

* Yarnoyden.

ly sensitive to all that is beautiful in nature, or grand and elevating in sentiment.

Who can read this sketch—beautiful as we believe it true—and not lament anew that its brilliant subject was prematurely cut off at the age of 33?

TREVELYAN—by the author of *Marriage in High Life*. 2 vols.: Philad.—CAREY, LEA & BLANCHARD.

An interesting story—from a female pen, so at least we assume—and wrought up with a thorough knowledge of the human heart and its passions, modified but not subdud by the arbitrary rules of society.

The characters both of Trevelyan and his sister are portrayed with great skill, and have withal much of originality in them.

TRAITS AND TRADITIONS OF PORTUGAL—collected during a residence in that country, by Miss PARDON. 2 vols.: Philad.—CAREY, LEA & BLANCHARD.—These are light and pleasing recollections by one who seems to have enjoyed the beautiful climate of Portugal, without suffering herself to be incommoded by the numberless inconveniences, especially to a female traveller, in that country of primitive usages. There is no continuous story; but, as the title implies, tales and traditions suggested by the place or company in which she happened to be. The stories, however, would have been quite as effective by the omission of the numberless Portuguese phrases, which—as the translation is given in notes—only serve to encumber the pages.

THE COOK'S OWN BOOK, AND HOUSEKEEPER'S REGISTER, &c. &c. By a *Boston Housekeeper*. 1 vol. 8vo. Boston: MUNRO & FRANCIS. New York: C. S. FRANCIS.—Some books are for instruction chiefly; others for amusement; some teach a particular branch of learning; others, more general, treat of the whole circle of sciences: but the book of books, profanely speaking, is that which exhibits man to most advantage in his distinctive character as "a cooking animal." Such a book is now before us—well printed, and with a due regard to the march of mind, now in full progress, having interleaved blank pages, whereon taste, curious of novelty, and fond of change, may record—for the benefit of after times, and future editions—the current remarks and *obiter dicta*, or opinions dropped by the wayside, of fastidious experimentalists. We therefore commend this book, as invaluable for reference, and especially to be consulted by all who desire to combine economy and health, with a reasonable share, of good living.

THE MUSEUM OF FOREIGN LITERATURE, FOR 1834.—2 vols. 8vo. Philadelphia, J. LITTLE.—We are indebted to the publishers of this well conducted monthly miscellany, for the whole series of last year, bound up in two handsome volumes—and furnishing of themselves a great mass of agreeable reading—which may always be taken up—laid aside—and resumed at pleasure; and thus fill up many a gap of time that might at least otherwise be wasted. One hardly realises, till the volumes are before his eyes, the amount and variety of matter, which in the course of a year is accumulated in this periodical—which certainly seems more valuable when thus collected, than even in its fresher but more fugitive state of monthly numbers.

THE BOOK-KEEPER'S ATLAS; or, perfect system of Book-keeping by double entry, &c. &c. by Wm. EDWARDS.—New York, HARPER & BROTHER.—This is a handsome and clearly printed quarto volume, showing by a series of actual transactions the most approved mode of stating, and keeping, and checking mercantile accounts. It appears to us well done; but what is much more decisive, it is so certified to be, by many active and intelligent merchants of our city.

AN ELEMENTARY PRACTICAL BOOK FOR LEARNING FRENCH, adapted to the capacity of children; translated from the German of Dr. J. H. P. Leidenstueck.

er, by Mrs. BARBARA O'SULLIVAN ADDICKS: N. York, J. B. COLLINS.—If we were in doubt as to the value of this school book and its adaptedness to the capacity of children, we should yield at once to the authority of the competent judges who have furnished the translator with the decisive testimonials she publishes of its merits. The method adopted in it, is that now generally pursued by, we believe, the most successful teachers in all languages—that of following, as nearly as possible, the natural way by which children come to the knowledge of their mother tongue: first by learning isolated words, then by combining them. This little volume is well and accurately printed.

MEDICAL AND SURGICAL CASES, &c.—by DUDLEY ATKINS, M. D. N. Y.—PETER HILL.—A well-printed volume—of cases rare and difficult—which will, we dare say, have abundant attraction for the profession.

THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES, for Feb. Philad.—CAREY, LEA & BLANCHARD. This, like the former, is a work mainly for the profession. It is a quarterly publication, well-printed, and apparently with abundant contributions. We are struck with one remark in a paper by Dr. Gibson, of Philadelphia, detailing the operation of removing a large tumor from the neck of a lad of 18—namely, that on a comparison of the results of tying up veins—always a hazardous experiment—death has most usually resulted in Europe from such an operation, while in this country, Dr. G. avers, that he never met with any case of death or injury from the operation. For this remarkable fact Dr. G. thus accounts: "I think it very probable that the constitutions of patients in this country—owing to all classes of people being well fed and clothed, and little exposed to hardships—are generally superior to those of Europeans, and as such more capable of resisting the operation of injury or disease."

DAILY MORTALITY OF THE HUMAN RACE.—The annexed extract from a work recently published in England, by a *Layman*, on the *State of the Departed Soul* taken in connexion with the sensation produced by the recent sudden death of Mr. Bouldin, of Virginia, on the floor of the House of Representatives, exemplifies anew the truth of the remark, that individual instances affect the imagination much more deeply than general truths. The death of this one Legislator, under the circumstances in which it occurred, startles the mind more than the immense fact, that more than ninety-one thousand beings, like him, perish daily.

From a late Work "On the State of the Departed Soul."

"The life of man, on an average, is little more than 30 years, and as there are one thousand millions of human beings on the face of the earth, (according to the latest estimate,) it will be found that 91,324 of our own race die every day. Every hour which goes over our heads, about 3,800 immortal souls go out of this world; and as the population of the earth is on the increase, a greater number come into it, to inhabit mortal bodies in their room—a consideration which should show how the necessity of preparation for yielding our places to others, and for joining the invisible flight of spirits which are continually leaving the earth; for no one can tell, but that the next moment, his soul may be called on to become one of the number.

The death of Mr. Wirt—after a short illness—at Washington, seems to have been deeply felt. The bar of the Supreme Court immediately assembled—Mr. Attorney General Butler presiding, when Mr. Webster offered a series of resolutions expressive of the admiration and respect of the meeting for the deceased, which he prefaced with a beautiful notice of the talents and character of his lamented friend.

[From the Globe.]

APPOINTMENTS BY THE PRESIDENT.

By and with the advice and consent of the Senate. William Noland to be Commissioner of Public Buildings in the City of Washington, in the place of Joseph Elgar, removed.

George Huyler to be Consul for the the port of Nassau, in the Island of New Providence, in the place of John Stoor, resigned.

Nicholas P. Trist to be Consul for the port of Havana, in the Island of Cuba, in the place of William Shaler, deceased.

Maximo de Acquire to be Consul for the port of Bilbao, in Spain in the place of F. Xavier de Ealo, resigned.

Joshua Dodge to be Consul for the port of Bremen, in the place of Nathaniel Pearce, removed.

Daniel Brent to be Consul for Paris, in France, in the place of Isaac C. Barnett, deceased.

Charles J. Hambro to be Consul for Copenhagen, in the Kingdom of Denmark, in the place of John Raynals, deceased.

Robert Grieve to be Consul for the port of Leith, in Scotland, in the place of Joel Hart.

John Morrow to be Consul for the port of Halifax, in the province of Nova Scotia.

Joseph Balestier to be Consul for the port of Rhio, in the Island of Biantin, in the Malayan sea.

Thomas H. Barker to be Consul for the port of Elsinour, in the Kingdom of Denmark.

W. M. Haxton to be Consul for the port of Bathurst, in the Island of St. Mary's in the river Gambia.

By the annual report of the New York Savings Bank, it appears that in the course of the year 1833, they received from 20,015 depositors, \$1,155,980.33. Five thousand and twenty seven of these new accounts. During the same period, \$923 072.25 have been drawn out by 11,893 depositors; 2534 of whom have closed their accounts. Among the depositors, there are 150 clerks, 101 cartmen, 146 carpenters, 869 domestics, 400 grocers, 589 laborers, 331 seamstresses, 152 shoemakers, 123 tailors, 688 minors.

The receipts of the bank since its establishment in July, 1819, have been \$8,902,137 24; and the sums repaid to depositors have amounted to \$6,748,202 65—having in the bank on the 1st of January, 1834, 2,153,934 59. Add to this the interest up to the same date, and including the January dividend, and there was due to depositors on the 1st of that month \$3,105,778 03. The simple statement of facts in this report, shows in the most conclusive manner, the great value of this institution.—[Daily Advertiser.]

[From the Journal of Commerce.]

BANK OF NEW BRUNSWICK.—News was received here yesterday afternoon, that the Bank of New Brunswick, N. J. had suspended payment. Its circulation in the city of New York is believed to be small.

In consequence of injurious reports and the pressure of the times, the President and Directors of the Bank of New Brunswick have been under the necessity of suspending payment; but at the same time they deem it their duty to caution the public against sacrificing the bills of said Bank,—as they believe the Bank to be solvent; and that eventually all the bills will be redeemed. F. RICHMOND, Cashier. February 18.

[From the Lowell Journal of Wednesday.]

LOWELL, Mass.—We learn with regret, almost approaching to horror, that many of the directors and stockholders of the Factories in this town, are upon the point of deciding to stop the mills. The effect upon thousands of our people will be indescribable. Laborers of every class, and artisans of every trade, must go, they know not whither, to seek in vain for subsistence; and all the inhabitants who depended upon them again for a support, will be left destitute of means to obtain their daily bread. Others of the stockholders, and especially the agents and superintendents, are desirous of preventing this annihilation of the laboring interests, by reducing the rates of wages so low, that they would feel justified in continuing to manufacture for the present, though no doubt can exist, for a moment, that it would be safer and better for them, on many accounts, to stop at once. Common humanity will pray, that the results of their deliberations may be favorable to the poor, and if such a rate of wages can be established as will prevent too great a sacrifice on the one hand, and enable the working classes to live for a time on the other, we may hope, that dark as the prospect is before the country, some means will be devised by the Government to restore prosperity, and give a new impulse to manufacturing enterprise.

From FRANCE, we have received papers which should have reached us Friday last, to 26th Dec'r.

They present the King's speech on meeting the

Chambers—as unmeaning as the most unmeaning of its forerunners—and which, though it alludes to all European nations, with whom questions of any sort are pending, makes no reference whatever to the United States; notwithstanding the fact, that a treaty, duly ratified on both sides, has been rendered inoperative by the fault of the French Government.

We take the extracts which follow from the Courier and Enquirer:

FRANCE.—PARIS, DEC. 24.

His Majesty's Speech on opening the Session of the Chambers.

"PEERS AND DEPUTIES—Gentlemen, France has continued in undisturbed tranquillity since our last session, and the enjoyment of the blessings of order and peace. Throughout the country, industry and labor meet with their reward. The population, occupied and peaceful, feels assured of the stability of our institutions, of my fidelity in watching over them, and that public security is the pledge of national prosperity.

"It was by guarantying our rights, protecting our interests, and by the equity and moderation of our policy, that we have obtained these happy results.

"In order to render them lasting, we shall persevere with energy and patience in the same system. An unceasing vigilance is still necessary; insensate passions and culpable manoeuvres are at work to undermine the foundations of social order.

"We will oppose to them your loyal concurrence, the firmness of the magistrates, the activity of the administration, the courage and patriotism of the National Guard and the Army, the wisdom of the nation, enlightened as to the danger of these illusions, which those who attack liberty, in pretending to defend it, still seek to propagate—and we will insure the triumph of constitutional order and our progress in civilization. It is thus, gentlemen, that we shall at length put an end to revolutions, and accomplish the wishes of France. I thank her for the support she has given me. I thank her for the tokens of confidence and affection with which she has surrounded me. I received them with emotion in such of the provinces as I have been able to visit; and I render thanks to Providence for the blessings which our country already enjoys, and for those of which the future holds out a promise.

"You also, gentlemen, will second me in my endeavors to protect the increase of our national wealth, in opening to our commerce and industry new sources of prosperity, and to spread ease with labor throughout all classes of the population.

"I hope that the new Law of Customs, while it evinces the progress of our industry, will conciliate the protection that is due to it, with those principles of wise liberty which enlightened governments are disposed to admit.

"Popular instruction has received, thanks to your concurrence, a salutary impulse.

"The Finance laws, and those required by the execution of treaties, will be speedily presented to you. The public revenue improves, and every thing foretells that it will continue to follow the ascending movement of our prosperity.

"Several projected laws, some of which have been already presented to you, will also be submitted to your deliberations. I have reason to hope that the promises of the Charter will be accomplished in the course of this Session.

"I am happy to announce to you that our relations with all the Powers and the assurance I receive from them as to their dispositions, leave no doubt as to the maintenance or the general peace.

"The Peninsula has become the theatre of important events.

"As soon as the Government of the Queen Donna Maria II. was established at Lisbon, I renewed our diplomatic relations with Portugal.

"In Spain, the death of King Ferdinand VII. has called the Princess his daughter to the throne. I hastened to acknowledge the Queen Isabella II., hoping that such prompt acknowledgement, and the relations it established between my Government and that of the Queen Regent, would contribute to preserve Spain from the miseries with which she was threatened. Already tranquillity is beginning to be restored to the provinces in which rebellion had broken out. The corps d'armée, which I have ordered to be formed, will protect our frontiers in any event.

"Continuing to be intimately united with Great Britain, we have every reason to hope that the difficulties which still retard the conclusion of a definite Treaty between the King of the Belgians and the King of the Netherlands, will compromise neither the great interests of Belgium nor the tranquillity of Europe.

"Switzerland has been momentarily disturbed by dissensions, which the prudent firmness of her Government in a short time appeared. I hastened to render her the services that she had a right to expect from a faithful and disinterested ally."

"The Ottoman Empire has been threatened with great perils. I was anxious to hasten a pacification at once called for by the interest of France, and the stability of European order. I shall continue my efforts to ensure its preservation."

"The events which I have just mentioned, and especially the situation of the Peninsula, have rendered it my duty to maintain the army upon the footing required by the safety of the State."

"Let us consummate our work, Gentlemen; let order, powerful and respected, be henceforth shielded from every attack. Let the efficacious protection of the national interests dissipate the last hopes of the factious, and France, happy and free under the tutelary shield of the Government she has founded, will at length pursue without obstacle the career of her prosperity. This is my most ardent wish, and you will assist in securing its accomplishment."

PARIS, DEC. 24.—"When the opposition Deputies entered the Chamber yesterday, the Ministerial members accosted them, and in great perturbation made them the most alarming recitals. The *Société des Droits de l'Homme*, they said, had, on the preceding evening, held a meeting, and resolved that one of its members should, after the delivery of the speech from the throne, rise, and declare that Louis Philip having, like Charles X., violated his oath, he had released every Frenchman from his allegiance. M. Vayer d'Argenson had excused himself from undertaking the task, which was then entrusted to M. Audry de Puyravcau, who had accepted it, and was to be seconded by M. d'Argenson. The deputies of the *Gauche*, on hearing the statement of this enormity, received it with ridicule, but could not dissipate the alarm of their colleagues of the *Centre*. Fortunately, a deputy, who is the friend of M. de P., on hearing the tale of scandal, informed them that the Honorable Deputy for the Charente Inferieure had not yet left his department. The alarm, however, had not subsided, and contributed to increase the acclamation when the King entered the Chamber. This news promulgated in the Chamber, was circulated throughout the day before. It is probable that Count d'Argout suffered himself to be abused by some stupid report of the Police, and gave credit to it without making any inquiries as to its truth."

HAVRE, DEC. 22.—The westerly winds that have constantly prevailed for the last six weeks, have kept upwards of fifty vessels of different descriptions completely bound in the port, and on the first favorable change, we shall have the sight of a large fleet leaving our harbor. The weather continued very tempestuous throughout last night, the gale blowing at times with very great violence, but this morning it has subsided, though the sea continues to roll very heavily."

SPAIN.

PARIS, DEC. 25.—The following intelligence, from Madrid, is of the 13th inst. :—"Tranquillity is far from being re-established; on the contrary, the insurrection is becoming more general. In every direction, the public spirit is showing itself more hostile to the Government of the Queen; on one side the Liberal party, with its importunities, and on the other masses of fanatics, following the instigations of the ecclesiastics, who seduce and excite them. The Government is moving in five different directions, for each Minister has a policy of his own; consequently it is impossible that there can be any accord in the system. The Prime Minister is in favor of resistance, or even of reaction—he of the *Fomento* (Interior) for a progressive improvement of the administration of the country; hence the late territorial division, and hence by a decree of the 10th inst., a free commerce in silk, paper, soap, cloths and other articles, has been adopted."

The Minister of the Finances confines himself entirely to his department, and intends to introduce important improvements; the Minister of War, more enlightened than the others, is forming the army upon the Constitutional basis, being the officer who, in 1832, at Cadiz, had the direction of the staff till Ferdinand was released. The Minister of Justice, in order to do nothing that may compromise himself, holds to the *statu quo* of his predecessors. And all this is done in the presence of a Council of Government directed by the Marquis de las Amarillas, which frequently renders the Royal power uneasy because it is supported by the public, and increases its influence in proportion to the unpopularity of M. Zes. At Aranjuez disturbances have become so serious as to warrant the appointment of a Governor

with unlimited powers, as in a state of siege. The officer appointed is Major Don Manuel Pinto, who has set out already, accompanied by an Advocate, and who is to act as his counsellor in the Courts Martial that are to be holden."

The Queen, wishing to hunt in the forest of Vignuela, was obliged to surround herself with troops in order to ensure her personal safety. At Almodovar, a band of 350 men are moving about the country, proclaiming Don Carlos. At Agadete, a monastery has been converted into barracks for Carlist insurgents. At Fuente del Ropel and Castro Gonzalo, Carlist soldiers have been seen taking the road to Portugal, probably to join Don Carlos. At Olmeda the Volunteers who escaped from Madrid have been overtaken and dispersed by the Queen's troops. At Jenes sixty Carlists having attempted to gain possession of some property belonging to the Queen; the burgers have been armed as a means of protection. At Valderroble and Calacette some considerable columns of Carlists are said to have been attacked by Gen. Carastala. At Elda and Petrer the Carlists have been endeavoring to stir up the people, but Col. Jartes, who on the 5th was at Infantes, was preparing to attack them. In La Mancha, El Locho is at the head of the insurrection which has proclaimed Don Carlos. In this country are also the bands of Sedillo and Barba.

At Cabrerros and Naval Carnero in the very environs of the capital, bands of Carlists audaciously parade about; they are paid and protected by the Convent of Guisando. On the second instant the Bishop of Leon omitted the town of Caratellos in order to join Don Carlos, taking the direction of Carcion. Troops have been sent against the Convent of Matallana, one of the principal promoters of the rebellion. The accounts from Bilbao and Biscay, are much more favorable to the Queen's cause. Don Vincent Sancher Salvadoz has been appointed Military Governor ad interim of Badajoz. At Seville, a Carlist plot has been discovered and many arrests have been made, and the Prefect of Police at Santa Cruz, has been obliged to place many of the most distinguished inhabitants of the town in secret confinement. A great many officers of the Regiment de la Reyna who were in garrison there have deserted and fled to join Don Carlos in Portugal. At Riofrio the chief Balmaseda is proclaiming Don Carlos at every point. On the 4th, he took from the Royal Depot at Sigüenza, ten thousand uniforms for 365 men, and seventeen muskets. At Butares the Carlist Chief Vargas has been surprised, taken and shot, but his followers continue to devastate the country.

At Valencia the whole country is filled with Carlist bands, but the high road is not occupied by them. General San Martin is shortly expected to arrive in the province and put them down. At Burgos, on the 5th, several Carlist chiefs were shot. This part of the kingdom is remarked for its fanaticism. The rebel leader, Carnicer, is at Becete with 300 armed men. This is a general view of our situation, which can scarcely be considered as an advantageous one, when the difficulties it throws in the way of collecting taxes, and providing the Government with the means of putting down the insurrection are taken into the account. Under these circumstances, the announcement of the retreat of M. Remisa, the Director-General of the Treasury, is not without importance. It is reported that he will be succeeded by M. Gargollo, Director of the Sinking Fund." Another letter from Madrid of the same date gives the following :—"M. Burgos, the Minister of the Interior, has been honored with the Grand Cordon of the Order of Isabella the Catholic."

M. Latre, Prefect of Police at Madrid, has been promoted to the rank of Major in the Royal Army. He was one of the Deputies to the Cortes in 1830.—M. Clemencin, formerly Minister to the Cortes, has been appointed Librarian to the Queen, in the room of M. Fernandez, deceased. All these acts partake of the movement, which M. Zes wished to avoid by his manifesto and circular letter. M. Burgos has conciliated the nobility by investing them with employments. As to the Count de Florida Blanca, he is opposing the Ministry with great adroitness, and gaining popularity by demanding, not a system of anarchy, but a wise, just, and enlightened administration. At the same time the Carlists are not discouraged."

Extract of a letter of the 26th inst. from Bayonne :—"One of the Secretaries of the French Embassy at Madrid arrived here yesterday, having been stopped and robbed by the Carlists at Villa Real. The mail, which left here on the 16th for Madrid, has also been stopped at Villa Real. The letters were taken out, and the passengers robbed."

The *Estrella*, a Madrid paper of the 8th instant, says—"A steam vessel, a frigate, two brigantines, and two transports, all belonging to Don Pedro, have arrived at Faro el Lago, and landed 1800 men, between 80 and 100 horse, and a large quantity of ammunition and provisions." The same journal also contains the following :—"It appears that 700 horses, with several artillery wagons, and about 60 other carriages belonging to the army of Don Miguel, have arrived at Valencia de Minho. They retreated in consequence of the late affairs in the environs of Oporto."

TURKEY.

SMYRNA, NOV. 16.—The number of European ships of war stationed in our seas, is increased every day. Sir Pultney Malcolm sailed hence yesterday for Vourla, where the greater part of his squadron is assembled, and where he will receive the reinforcement sent him from England. The British admiral will not quit that port until he receives fresh instructions from his Government, which he expects next week by the Salamander steam-packet. Ali is too powerful; it is thought, however, that this state of things cannot last long; and that Mehmet Ali himself, seeing the impossibility of establishing a monopoly in Crete, as he has done in Egypt, and as he may do perhaps in Syria, will give a possession which can only be injurious to him. It is said that the regiment last arrived, of 3,200 men, will relieve the Albanian troops in their cantonments. The Egyptian Admiral, Osman Pacha, is still off Sunda, with two ships of the line of 100 guns, one of 84, and a frigate of 60. An Egyptian sloop of war was lost in a storm on our coast a fortnight ago, with all the crew, 27 in number.

VIENNA, DEC. 17.—We learn from Odessa that several ships of war are fitting out in the ports of the Black Sea, a proof of a fixed resolution to be ready to meet events. The commercial world is in the meantime, no ways uneasy as to the interruption of peace, hoping to see those differences between the Great powers speedily arranged, and a general disarmament follow.

CONSTANTINOPLE, NOV. 12.—The Ottoman fleet is disarming, and will, as soon as the Sultan has returned to his palace at Therapia, leave the roads of Beschikash to return to the arsenal.

The *Hamburg Correspondent* says : The answer of the French Cabinet to the Note from that of Russia, respecting the affairs of Turkey, is, it is said, very strong, and the reply from Russia still more so. If as is believed possible, the French Ministry, in order to gain favor with the Chambers, should publish its answer, the reply of the Russian Government must also appear before the world.

HUMAN FATE.

A little child, a little child,
Upon its mother's knee,
With dimpled cheek, and laughing eye,
A holy sight to see.
A thoughtless boy, a thoughtless boy,
A truant from the school,
Urging his tiny wooden sloop
On through the glassy pool.
A musing youth, a musing youth,
With eyes fixed on a book,
Where he but sees his mistress' face
In her last farewell look.
A gay gallant, a gay gallant,
Hero of club and ball;
His father's pride, his mother's joy,
Admired and loved of all.
A traveller, a traveller,
Returned from foreign strand,
With store of wisdom, culled with care,
For use in his own land.
A happy man, a happy man,
With wife and children round,
And smiling friends, and cheerful home,
Where all pure joys abound.
A patriot, a patriot,
Intent on public good,
Who, in a court's ordeal tried,
Corruption's bait withstood.
A man of woe, a man of woe,
Bankrupt in heart and wealth—
Wife, children, hopes, all in the grave,
A bankrupt, too, in health.
A misanthrope, a misanthrope,
Disgusted with mankind,
Deserted by deceitful friends,
Whom favors could not bind.
A lunatic, a lunatic,
In melancholy mood,
Shrinking from every living thing—
Sighing in solitude.
A burial, a burial,
With none of kin to weep,
And lay the old man 'neath the sod,
To take his last long sleep.
Strange companie, strange companie,
Are these to meet, I woe!
Alas! they are but life's changes,
That in ONE MAN are seen!

RAILROAD CAR WHEELS, BOXES AND

AND OTHER RAILROAD CASTINGS.
Also, AXLES furnished and fitted to wheels complete at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 69 Wall street, New-York, will be promptly attended to. Also, CAR SPRINGS.

Also, Flange Tires turned complete.
Jas ROGERS, KETCHUM & GROSVENOR.

STEPHENSON,

Builder of a superior style of Passenger Cars for Railroads
No. 264 Elizabeth street, near Bleecker street,
New-York.

RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part of the New-York and Harlem Railroad, now in operation.
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NOVELTY WORKS,

Near Dry Dock, New-York.

THOMAS B. STILLMAN, Manufacturer of Steam Engines, Boilers, Railroad and Mill Work, Lathes, Presses, and other Machinery. Also, Dr. Nott's Patent Tubular Boilers, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited. m18

TO STEAMBOAT COMPANIES.

PROFESSOR RAFINESQUE, of Philadelphia, offers his services to render steamboats incombustible, and not liable to sink, even by the bursting of boilers, or striking against ice, sawyers and rocks. This will save many boats, much property, and the lives of hundreds every year. Those who neglect this easy improvement, deserve to be neglected and derided by the public as unmindful of safety. Apply, post paid. S1 R J M M & F

NOTICE TO MANUFACTURERS.

SIMON FAIRMAN, of the village of Lansingburgh, in the county of Rensselaer, and state of New-York, has invented and put in operation a Machine for making Wrought Nails with square points. This machine will make about sixty nails, and about forty 10d nails in a minute, and in the same proportion larger sizes, even to spikes for ships. The nail is hammered and comes from the machine completely heated to redness, that its capacity for being clenched is good and sure. One horse power is sufficient to drive one machine, and may easily be applied where such power for driving machinery is in operation. Said Fairman will make, vend and warrant machines as above, to any persons who may apply for them as soon as they may be made, and on the most reasonable terms. He also desires to sell one half of his patent right for the use of saw-machines throughout the United States. Any person desiring further information, or to purchase, will please to call at the machine shop of Mr. John Humphrey, in the village of Lansingburgh.—August 16, 1833. A20 R M & F

RAILWAY IRON.

Ninety-five tons of 1 inch by 1/2 inch,
300 do. 1 1/2 do. do.
40 do. 1 1/2 do. do.
900 do. 2 do. do.
800 do. 2 1/2 do. do.
soon expected.

Flat Bars in lengths of 14 to 18 feet counter sunk holes, end cut at an angle of 45 degrees with splicing plates, nails to suit.

250 do. of Edge Rails of 36 lbs. per yard, with the requisite chairs, keys and pins.
Wrought Iron Rims of 30, 33, and 36 inches diameter for Wheels of Railway Cars, and of 60 inches diameter for Locomotive wheels.

Axles of 2 1/2, 3, 3 1/2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

The above will be sold free of duty, to State Governments, and incorporated Governments, and the Drawback taken in part payment.
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Models and samples of all the different kinds of Rails, Chairs, Pins, Wedges, Spikes, and Splicing Plates, in use, both in this country and Great Britain, will be exhibited to those disposed to examine them.
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LOCOMOTIVE ENGINES.

THE AMERICAN STEAM CARRIAGE COMPANY, OF PHILADELPHIA, respectfully inform the public, and especially Railroad and Transportation Companies, that they have become sole proprietors of certain improvements in the construction of Locomotive Engines, and other railway carriages, secured to Col. Stephen H. Long, of the United States Engineers, by letters patent from the United States, and that they are prepared to execute any orders for the construction of Locomotive Engines, Tenders, &c. with which they may be favored, and pledge themselves to a punctual compliance with any engagements they may make in reference to this line of business.

They have already in their possession the requisite apparatus for the construction of three classes of engines, viz. engines weighing four, five, and six tons.

The engines made by them will be warranted to travel at the following rates of speed, viz. a six ton engine at a speed of 15 miles per hour; a five ton engine at a speed of 18 miles per hour; a four ton engine at a speed of 22 1/2 miles per hour. Their performance in other respects will be warranted to equal that of the best English engines of the same class, with respect not only to their efficiency in the conveyance of burdens, but to their durability, and the cheapness and facility of their repairs.

The engines will be adapted to the use of anthracite coal, pine wood, coke, or any other fuel hitherto used in locomotive engines.

The terms shall be quite as favorable, and even more moderate, than those on which engines of the same class can be procured from abroad.

All orders for engines, &c. and other communications in reference to the subject, will be addressed to the subscriber, in the city of Philadelphia, and shall receive prompt attention.
By order of the Company.

WILLIAM NORRIS, Secretary.

December 24, 1833.
For further information on this subject see No. 46, page 775 of this Journal.

AN INTERESTING AND USEFUL MAP.

A friend of ours has now in a state of forwardness, a Map upon which will be delineated nearly all the Railroads now chartered in the U. States. It is designed to show the present contemplated connexion of the different lines, as well as where others may hereafter be constructed to connect with them. It will be completed in a few weeks, and may be had either in sheets, or put up in morocco for pocket maps, in any quantity, by applying to the subscriber.
D. K. MINOR, 35 Wall street.
New-York, August 14, 1833.

INCOMBUSTIBLE ARCHITECTURE.

INCOMBUSTIBLE dwelling-houses and buildings of all kinds devised or built in New-York, or any part of the United States, as cheap as any other combustible buildings. Actual buildings and houses rendered incombustible at a small additional expense.

SHIPS of all sorts, and Steamboats, rendered incombustible, and not liable to sink, at a small expense.

For sale, 10,000 lbs. of ANTIGNIS, or Incombustible Varnish, at one dollar per lb.

Apply to C. S. RAFINESQUE, Professor of Hist. and Nat. Sciences, Chemist, Architect, &c. in Philadelphia, No. 59 North 3d street. A pamphlet given gratis.

References in New-York.—Mr. Minor, Editor of the Mechanics' Magazine; Messrs. Rushton & Aspinwall, Druggists. Editors in the city or country, copying this advertisement, will receive a commission on any contract procured by their means.
S1 R J M M & F



INSTRUMENTS.

SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

EWIN & HEARTY, at the sign of the Quadrant, No. 53 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude. For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewin & Hartly.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable. They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES F. STABLER,

Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' Instruments of your Manufacture, particularly Spirit Levels, and Surveyor's Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These Instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

WILLIAM HOWARD, U. S. Civil Engineer.

Baltimore, May 1st, 1833

To Messrs Ewin and Hartly.—As you have asked me to give my opinion of the merits of those instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming acquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprise so well merits, I remain, yours, &c.

B. H. LATROBE,

Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them upon application, to any persons desirous of perusing the same.

TO RAILROAD COMPANIES.

PROFESSOR RAFINESQUE, of Philadelphia, will undertake to build CARS that will carry along their own railway, and may be used on level M'Adam roads. They will have ten millions of money to be wasted on 1000 miles of iron railroads to be laid in the United States within a few years, and dispense with tracks and double tracks. These Cars may be drawn by horses or steam. He claims to have discovered them ever since 1823, by his caveat filed in the Patent Office. Apply, post paid. S1 R J M M & F

TOWNSEND & DUFFEE, of Palmyra, Manufacturers of Railroad Rope, having removed their establishment to Hudson, under the name of Duffee, May & Co. offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J. B. Jervis, Esq. M. & H. R. Co., Albany; or James Archibald, Engineer Hudson and Delaware Canal and Railroad Company, Carbondale, Luzerne county, Pennsylvania. Hudson, Columbia county, New-York, {
January 29, 1833.

ALBANY SEED STORE AND HORTICULTURAL REPOSITORY.

The subscriber having resumed the charge of the above establishment, is now enabled to furnish traders and others with FRESH GARDEN SEEDS, upon very favorable terms, and of the growth of 1833, warranted of the best quality.

The greatest care and attention has been bestowed upon the growing and saving of Seeds, and none will be sold at this establishment excepting those raised expressly for it, and by experienced seedsmen; and those kinds imported which cannot be raised to perfection in this country; these are from the best houses in Europe, and may be relied upon as genuine.

It is earnestly requested whenever there are any failures hereafter, they should be represented to the subscriber; not that it is possible to obviate unfavorable seasons and circumstances, but that satisfaction may be rendered and perfection approximated.

Also—French Lucern, White Dutch Clover, White Mulberry Seed, genuine Mangel Wutzel, Vellow Locust, Ruta Baga, and Field Turnip Seeds, well worth the attention of Farmers.

W. THORBURN,

347 N. Market st. (opposite Post Office.)

Catalogues may be had at the Store; if sent for by mail, will be forwarded gratis. Orders solicited early, as the better justice can be done in the execution.

* Mr. Thorburn is also Agent for the following publications, to wit—

NEW YORK FARMER and American Gardeners' Magazine. MECHANICS' MAGAZINE and Register of Inventions & Improvements.

AMERICAN RAILROAD JOURNAL and Advocate of Internal Improvements; and the NEW-YORK AMERICAN, Daily, Tri-Weekly, and Semi-Weekly; either or all of which may be seen and obtained by those who wish them, by calling at 347 North Market street, Albany.

SURVEYOR'S INSTRUMENTS.

Compasses of various sizes and of superior quality, warranted.

Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments manufactured and sold by E. & G. W. BLUNT, 154 Water street, corner of Maidenlane.

ENGINEERING AND SURVEYING INSTRUMENTS.

The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely new: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy; also, a Railroad Goniometer, with two Telescopes; and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.

WM. J. YOUNG,

Mathematical Instrument Maker, No. 9 Dock street, Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.

Baltimore, 1832.

In reply to thy inquiries respecting the Instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad, I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all Instruments of the kind are liable.

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sight, leaves the engineer scarcely anything to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to later angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,

JAMES F. STABLER, Superintendent of Construction of Baltimore and Ohio Railroad. Philadelphia, February, 1833.

Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors.

E. H. GILL, Civil Engineer.

Germantown, February, 1833.

For a year past I have used Instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these Instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY R. CAMPBELL, Eng. Philad. Germantown, and Norristown Railroad.

m1 ly

[From English papers.]

St. SIMONIANS.—M. Prati is continuing his lectures on St. Simonism at the Burton Rooms. We went yesterday evening to hear him, but we found that he said little or nothing which we have not given before in our notices of his former lectures. The chief topic last evening was the emancipation of women, which was to be brought about by education. Women were to receive the same education as men, and if they did they would be found equal to men in every thing that required mental faculties only. He had studied Gall, and phrenologically examined many women's heads, whose organs, save that of combativeness (Query—did he ever examine the Amazonian heads of the ladies of St. Gile's and Billingsgate?) were even more fully developed than those of men. From that he concluded, that if they received a proper education, they would excel men in the Arts and Sciences, and become equally if not more capable of directing industry, upon which his system is chiefly founded. He, therefore, hoped to see in the new arrangement of society, women great politicians, deeply scientific, and surpassing in the fine arts. He exhorted the ladies present, (there were few old ones who came to hear him) to apply themselves to study; and he assured them, if they did so, they would soon become equal to men, and be no longer subject to them. He counselled them to despise the epithets of "blue stockings and learned ladies," which the tyrant man applied to them merely to keep them in a state of subjection. He called upon them most emphatically to form an association for the emancipation of females, which would become not only the school of their own emancipation but of that of all mankind. Women were always benevolent and good, and the great Poet, who wrote the most offensive lines against them, could not at last help avowing that women were Samaritans in every situation. A great servile war was at hand unless women stepped in as did the Sabine women of yore, and preached and practised reconciliation. If they would apply themselves to study and emancipate themselves, they would speedily smooth down the roughness of man, and create a new heaven upon earth.

A gentleman here asked whether the St. Simonians intended to sweep away the present order of things; what was to be the form of their new government; and what places women were appointed to fill in it?

M. Prati said, the St. Simonians intended to sweep away nothing, but that the present state of things would sink under its own rottenness. The form of their government was to be a hierarchy—not an hereditary one—founded on nature, in which those of the greatest capacity would pre- side. The station appointed to woman would be that her capacity entitled her to. She might fill any situation which did not require great strength and muscular exertion.

Another Gentleman asked whether women were to command ships.

M. Prati. Oh certainly!

The same Gentleman. Do you also intend to man your ships with women [laughter]?

M. Prati. Not exactly; there may be half men and half women—that would make the voyage pleasant; but, on reflection, I think it would be better that there should be no women at all, since the employment of a sailor requires great muscular exertion. Women are to be captains and commanders, but not common sailors.

A general discussion then took place between the persons present on the form of government, the distribution of property, and the rights of women.—Though we paid great attention, we could not understand the different theories, nor, we believe, did the disputants themselves, since the matter ended in a general challenge, to be decided some day next week.

PRINCE TALLEYRAND: *Anecdotes.*—During a part of the time when Prince Talleyrand was an emigrant, he was reduced to so much want, that he was even obliged to sell a valuable watch. "I know a gentleman," said the Marquis d'Assigny to the prince, "who will lend you a few hundred crowns. I yesterday heard him say, in the presence of two opulent English merchants, that he always keeps two thousand crowns to serve his friends." "You are laboring, I apprehend," replied the prince, "under a mistake; if he lent me this money, he would no longer keep it."

"What is your opinion respecting Mr. Nugent, a very witty old man?" said a friend to Prince Talleyrand. "He always puts me in mind of an antique chateau haunted by spirits—dans lequel il revient des esprits."

The Countess de —, whose amours formed a general subject of conversation, was blamed in very severe terms by a certain lady, in the hearing of Talleyrand. "I cannot entirely agree with you," said the prince; "the countess is merely enjoying the loss of her reputation."

"I was standing on the Pont Royal one evening," said Talleyrand; "a splendid carriage passed, in which was La Tour, the commissary-in-chief of the army, who had been a footman. 'Do you know who that person is?' cried a fish-woman to her comrade. 'Yes,' replied the latter; 'he is a *ci-devant* *derrière*.'"

Mlle. Fanny S—, a very lovely girl, had been the greater part of the evening in earnest conversation with a young clergyman, remarkable for his handsome person. When the latter had taken his leave, the young lady said to the prince that she had been much edited, and that the congregation—

"Flock, you intend to say, Miss—. I suspect our friend to be more of a shepherd than a pastor."

"He relates an anecdote extremely well," said Mr. B., speaking of Count Daru; "but half the stories he recounts are untrue, although they have the appearance of probability. What satisfaction can he derive in deceiving us?" "That pleasure," said the prince, "which a man experiences in making others believe what he does not believe himself."

A discussion arose respecting certain usages among different nations. "They may all be traced to some motive," said Lally Tollendal. "Why, then, said a gentleman, 'do the French, in driving their vehicles, give and take the left? In a drawing-room, you always give the right: you cede the right upon all occasions when you intend to shew deference to a person.' "It is quite clear," said T. "that the English are better whips than we; if there were no other reason than this, it would show that we are in the wrong. The riders sit on the right, and are, of course, able to see how near the wheels can approach each other. Talking of right and left, as far as etiquette and precedence are concerned, recalls to me a saying of Madame Palatine de Bavière, the abbess of Maubuisson. Another abbess, who was about to pay her a visit, sent to inquire if the right would be given to her. 'Ever since I have been a nun,' replied Madame Palatine, 'the only difference I know between the right and the left is in making the sign of the cross.'"

* * At the commencement of the last year I offered to send the American *tri-weekly* instead of *semi-weekly*, together with two of my periodicals, in exchange to those who would publish my advertisements of the different periodicals. In consequence of this notice, the exchange list was increased to 165. I soon found that the expense would be greater than I had anticipated, yet I had made the offer, and would of course continue it through the year—as I have done. I however find it *too expensive* to continue to send as heretofore. The circulation of my PERIODICALS, (upon which the expense falls,) will not warrant it, and I must, therefore, notwithstanding the uniform kindness with which they have been treated by those to whom they have been sent, materially reduce their exchange list.

The *semi-weekly* American will hereafter be sent in exchange to those who will publish the following advertisements a few weeks for the difference of price. *New-York, January 20, 1834.*

VOL. III. OF THE RAILROAD JOURNAL AND ADVOCATE OF INTERNAL IMPROVEMENTS is published once a week in quarto form, with 16 pages to each number, at \$3; or in *semi-monthly* form, of 32 pages, stitched in a cover of colored paper, at \$4 per annum, in advance. The first and second volumes of the Journal may be had in two parts to the year, either stitched in covers or bound in boards, at the subscription price, with price of binding, in one part, 50 cents, in two parts \$1 per volume. Those in covers may be sent by mail to any part of the country, the same as a magazine. Published at No. 35 Wall st., New-York, by D. K. MINOR, Editor and Proprietor.

THE MECHANICS' MAGAZINE AND REGISTER OF INVENTIONS AND IMPROVEMENTS is now just commencing its second year. It will be continued in a manner altogether superior to that of the first year. It has drawn forth many valuable correspondents, in different parts of the country, with the assistance of whom, and those who may hereafter contribute to its columns, together with the ability of Mr. JOHN KNIGHT, formerly, and for several years, proprietor and publisher

of the LONDON MECHANICS' MAGAZINE, who is engaged as Editor, the proprietor has no hesitation in saying that it will be found worthy of an extended circulation and a liberal support. The first year, or two first volumes, having been stereotyped, may now be had either in numbers, or bound in boards—either at wholesale or retail. Price \$1 50 per vol. in numbers, or \$1 75 in boards, or \$3 per annum. A liberal discount made to the trade. Published by the proprietor, D. K. MINOR, at No. 35 Wall st. N. Y.

THE NEW-YORK FARMER AND AMERICAN GARDENER'S MAGAZINE, has commenced the second volume of a new series. It is published once a month, in quarto form of 32 pages to each monthly number, at \$3 per annum in advance. The last volume may be had either stitched in a cover, so as to be sent by mail, or in boards. Price, stitched, \$3 25; in boards, \$3 50. Each subscriber who pays in advance, or previous to the first of April, free of postage or commission, will be entitled to eight additional pages to each monthly number, or 96 extra pages to the volume. Published at No. 35 Wall street, N. Y. D. K. MINOR, Proprietor. Jan. 22, 1834.

A QUARTERLY JOURNAL OF AGRICULTURE AND MECHANICS will hereafter be published at the same office. Each quarterly number will contain about 300 large octavo pages, embracing the most choice articles from the best agricultural and mechanical publications both in America and Europe. It will form 2 volumes to the year, of about 640 pages each, and will be put up like other quarterly publications, so as to be sent by mail. Price, \$5 per annum, in advance.

N. B. A small edition only will be published.

D. K. Minor also publishes the NEW-YORK AMERICAN, daily, tri-weekly, and semi-weekly.

Also, the PLOUGH-BOY, a cheap agricultural publication, of eight quarto pages, is issued once a week, at \$1 50 per annum, in advance. It contains much interesting reading upon agriculture, &c.

All Letters and Communications for the above publications, may be addressed, free of postage, to D. K. MINOR.

List of Subscribers to the Railroad Journal who have paid in advance to Jan. 1, 1835, —continued from February 8, 1834.

J. W. Crane, Schenectady, N. Y.
E. M. Adams, Smithville, Jef. co., N. Y.
J. S. Barnard, Dagshoro, Del. State.
J. W. Collet, Flushing, L. I.
W. H. Rodman, Philadelphia, Pa.
John Pickell, Danville, N. Y.
R. Paul, St. Louis, Missouri.
A. B. Allaire, Howell Works, N. J.
A. Livermore, Meadville, Pa.
Jonathan Jessup, Waterloo, Md.
John Watson, Waterloo, Md.
U. A. Boyden, Lowell, Mass.
S. B. Cushing, Providence, R. I.
D. Mathews, Schenectady, N. Y.
John Noonan, Yorkville, N. Y.
B. A. Alderson, Lexington, Ky.
G. W. Shields, ditto.
L. Randall, ditto.
A. O. Barber, ditto.

A scientific person versed in Mechanics, Chemistry and Mineralogy, of several years practical experience in different branches of Civil Engineering, and who is also a good draughtsman, is desirous of obtaining employment either as an instructor in some public institution, or as an Engineer upon some private or public work.

He was educated at one of the first scientific institutions in the United States, and was for several years an instructor in the said institution.

A line addressed to B. at Railroad Journal Office, No. 35 Wall street, will meet with immediate attention. J. H. B.

PATENT RAILROAD, SHIP AND BOAT SPIKES.

The Troy Iron and Nail Factory keep constantly for sale a very extensive assortment of Wrought Spikes and Nails, from 3 to 10 inches, manufactured by the subscriber's Patent Machinery, which after five years successful operation and now almost universal use in the United States (as well as England, where the subscriber obtained a Patent,) are found superior to any ever offered in market.

Railroad Companies may be supplied with Spikes having countersink heads suitable to the holes in iron rails, to any amount and on short notice. Almost all the Railroads now in progress in the United States are fastened with Spikes made at the above named factory—for which purpose they are found invaluable, as their adhesion is more than double any common spikes made by the hammer.

All orders directed to the Agent, Troy, N. Y., will be punctually attended to.

HENRY BURDEN, Agent.

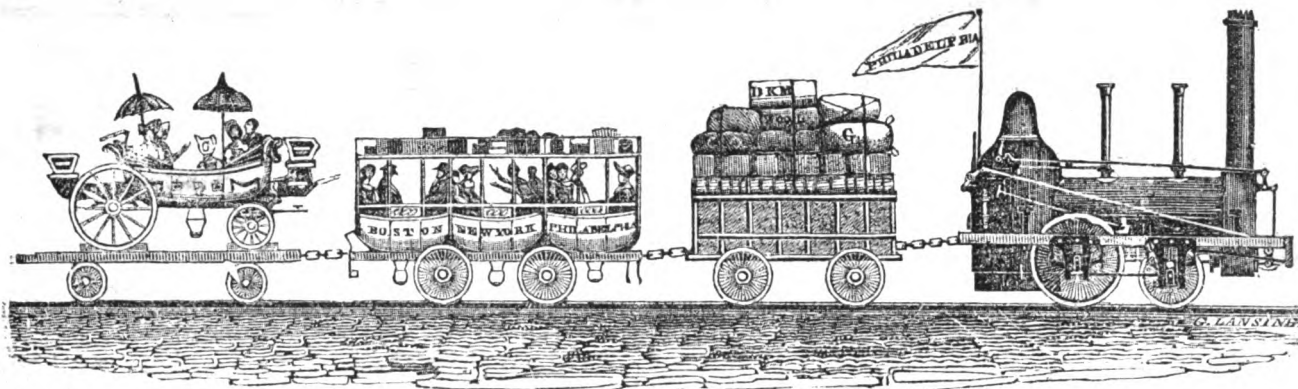
Troy, N. Y. July, 1831.

Spikes are kept for sale, at factory prices, by I. & J. Townsend, Albany, and the principal Iron Merchants in Albany and Troy; J. I. Brower, 222 Water street, New-York; A. M. Jones, Philadelphia; T. Janvics, Baltimore; Degrand & Smith, Boston.

P. S.—Railroad Companies would do well to forward their orders as early as practical, as the subscriber is desirous of extending the manufacturing so as to keep pace with the daily increasing demand for his Spikes.

J. H. B.

H. BURDEN.



AMERICAN RAILROAD JOURNAL, AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT No. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, Editor.]

SATURDAY, MARCH 1, 1834.

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, MARCH 1, 1834.

In reply to the oft repeated inquiry "has Mr. Vignolle's promised article on Roads and Railroads yet appeared," we can only say that it has not, but we hope soon to receive it.

The letter of L. B. W., of Fort Wayne, Ia. is received, and his request attended to, relative to C. G. V. The paper containing the communication to which he alludes, has not been received. We are obliged to him for his suggestion relative to a tabular view of all the railroads in the United States. The propriety and utility of such a measure has more than once occurred to us, but hitherto we have been unable to obtain the necessary information, and for the present, other engagements do not admit of our undertaking the compilation. We shall endeavor, however, in the course of the present volume, to present our readers with a list of railroads in the United States, with a statement of their length, mode of construction, cost, &c. &c., and shall, therefore, be obliged to those engaged in their superintendence, to give us data for the purpose.

Locomotive Engines—Historical Retrospect. Compiled from the Report of the Committee of the House of Commons, of August, 1831. [From the London Mechanics' Magazine.]

The first locomotive engine was invented twenty-eight years ago, by the late Mr. Trevithick, a very ingenious man, and subsequently improved and used by Mr. Blenkinsop and others, for the service of collieries.

Mr. Gurney stated that his carriage weighed only 2½ tons; that in 1825 he began to work it; that in 1826 he went up Highgate and other hills; and in 1827 he went to Bath. That he has run 18 to 20 miles an hour.

that he is able to compete with the coaches, with an advantage, as 2½ 10s. to 15s. per hundred miles.

that he makes no noise.

N. B.—Mr. G. run his carriage for some time between Cheltenham and Gloucester, to the great loss of his supporters, Sir Charles Dance and others.

Mr. Hancock stated that his carriage weighed 3½ tons, that, with a piston of 9 inches, he has worked at 400 lbs., and on an average at from 60 to 100 lbs. on the square inch; consequently, could exert a power of 13 to 90 horses. that he makes only one-third of the noise of others.

Mr. Farey stated that Mr. Hancock and the Messrs. Heaton were the only candidates likely to prove successful.

suggested that there should be 2 horses at every hill, for the help of these locomotives. stated that passengers were annoyed from heat, noise, smoke, and dust.

condemns Gurney's, &c.

N. B.—The Messrs. Heaton, residing at Birmingham, were not examined.

Mr. Ogle stated that his engine is 20 horse power, with a pressure of 250 lbs. on the square inch. that his carriage weighs 3 tons. has gone at the rate of 32 to 40 miles per hour—and has ascended hills at the rate of 164 miles per hour. explosion impossible.

he is on the point of establishing a factory, so great are the demands for his carriage!

Mr. Gibbs was very sanguine in his hopes of success—proposed to plough, and drive vans.

Mr. Summers (the partner of Mr. Ogle) stated that they had constructed 2 carriages, weighing 3½ tons, besides passengers. that they had carried 9 persons at the rate of 9 miles, when the crank broke, and the carriage was sent back by canal. has carried 19 persons at the rate of 10 miles. has travelled at the rate of 30 miles during 4½ hours frequently; consequently 135 miles in 4½ hours.* has ascended Shirley-hill, which is 1 foot in 6.

Such was the state of the locomotives in 1831.

Observations.—In 1833, Mr. Gurney, the most persevering of all the competitors, is beaten out of the field, to his great cost.

Sir Charles Dance, his substitute, has run many times to Croydon and Greenwich—made an attempt to go to Birmingham, in which he failed—and made, lastly, an attempt to run daily to Clapham, in which also he has failed.

Messrs. Hancock, Ogle, Gibbs, Summers, and Heaton, are all in movement, but merely by convulsive starts; although they are provided with powers that may be raised to twenty, thirty, forty, and eighty horse power.

About twenty years have passed away in experi-

* Mr. Summers afterwards explained that what he meant to say was, that he had travelled "for the space of four miles and a half—not four hours and a half—at the rate of thirty miles an hour."—[Ed. M. M.]

ments, and not less, probably, than 100,000l. have been expended upon them; yet, after all, nothing effectual has been done.

At one period steam guns were the terror of many: they were to have mowed down whole ranks of infantry and cavalry; even artillery were to be quite impotent before them; but nobody now hears or dreams of such things. It would almost seem as if steam-carriages were destined to run the same course. The writer hopes not; but if he were to look for grounds to anticipate a different result, it would not be in any of the prospectuses for steam-carriage companies that he has seen, of which the best that can be said is, that they circulate much easier than the wheels of the carriages that they respectively extol to the skies.

A. FRENCHMAN.

List of Steam Coaches and Drags now building and built in London and its Vicinity.

We have been favored with this list by a correspondent, who states that its "accuracy may be depended on." We really had no idea that there were so many locomotive competitors in the field.—[Ed. M. M.]

Hancock	..... 1	Infant, his own, built, experimental one.
Ditto	..... 2	Era, (for a company,) built.
Ditto	..... 3	Enterprise, (ditto,) built.
Ditto	..... 5	a new one now building, his own
Ditto	..... 4	Autopsy, his own, built.
Gurney, Mauda.	} 1	a drag, built and altered by the
ley, Stone, and Gibbs		said engineers, for Sir C. Dance, Knight.
Ogle	..... 1	a carriage, his own, built, experimental one.
Squire	..... 1	a carriage, himself and others, experimental one.
Frazer	..... 1	a carriage, himself and others, building, experimental one.
Gibbs & Applegath	1	a drag, themselves, experimental one, built.
Gatfield and Bower	1	a drag, themselves, experimental one, building.
Andrew Smith	.. 1	a drag, (for Mr. King,) experimental one, building.
Palmer	..... 1	a drag, his own, experimental one, built.
Redmund	..... 1	a carriage, experimental one, building.
Manting, Joseph	.. 1	a carriage, his own, experimental one, building.
Phillips & Co.	.. 1	a carriage, their own, experimental one, building.
Silk	..... 1	a carriage, his own, experimental one, building.
Smith and Co.	.. 1	a carriage, (for company,) experimental one, building.
Mile-end (name not known)	..... }	a carriage, (for company,) experimental one, building.

STEAM TRAVELLING.—A company has been just established to run steam-coaches in various parts of England. The capital of the company is to be £350,000. They have ordered fifty coaches to be built at Birmingham and six at Maudsley's. Sir H. Parnell is the chairman of the company.

Report of the Board of Directors of the Pontchartrain Railroad Company, to the Stockholders, at their meeting of December 2, 1833.

Office of Pontchartrain Railroad Co.
New-Orleans, Dec. 2, 1833.

TO THE STOCKHOLDERS:

I am instructed by the board of directors to lay before you the following statements:

1. Statement of the affairs of the company on the 30th of November ult.

2. Comparative statements of receipts for 1831, '32, and '33.

3. Statement of the machinery ordered, and of the work required for the completion of the road, and their probable cost.

By statement No. 1, it will be seen that the rail track, harbor, machinery, real estate, negroes, &c. &c., have cost - \$443,433 76

To which may be added the additional amount required for machinery, and the completion of the road, say - - - 18,600 00

Making the total cost of the road, independent of current expenses \$462,033 76

The same statement shows the debts of the company are as follows:

Bills payable, due in 1834 - \$37,419 36

" " 1835 - 5,085 00

Due to sundries - - - 3,000 00

Bonds in favor of the City Bank, payable in 1837, '42, and '47 - 50,000 00

\$100,504 36

Their available means are as follows:

Bills receivable, due in 1834, '35, '36, and '37 - - - \$19,826 14

Amount due by sundries - - - 5,257 01

Cash on hand - - - 3,627 77

Sinking fund to meet the reimbursement of bonds - - - 3,484 00

\$32,194 92

Amount due on the Darcantel property, and in suit, about \$40,000 00

The second statement shows that the receipts of the company, since the commencement of their operations, have been as follows:

For 1831 - - - - \$16,141 01

" 1832 - - - - 44,101 15

" 1833 - - - - 75,929 25

The third statement enumerates the machinery ordered, and the works required for the completion of the road and harbor, and their probable cost.

SUMMARY.

Capital stock of the company - \$250,000 00

Cost of works, including probable amount required for their completion, &c. as per statement \$462,033 76

DEBTS OF THE COMPANY FOR 1834.

Amount due as above - - - \$37,419 36

Probable cost of the machinery ordered, and works required for the completion of the road - 18,600 00

Probable current expenses, - - - 30,000 00

Interest on bonds - - - 4,000 00

Due to sundries - - - 8,000 00

\$98,019 36

AVAILABLES FOR 1834.

Bills receivable - - - - \$3,077 53

Cash - - - - 3,627 77

Return duties on rails, when laid - 2,000 00

Rent of hotels and bath houses - 4,200 00

Due by sundries - - - 5,257 01

Probable receipts; suppose the same amount as in 1833 - - - 75,929 25

\$94,091 56

It is confidently expected that the balance of bills receivable, and the amount due on the Darcantel property, will more than suffice to

redeem the bonds issued in favor of the City Bank.

It may be well to observe here, that the real property of the company is put down at cost, while it is worth more than double the amount.

The cholera and yellow fever, during the last summer, have certainly reduced the receipts of the company upwards of twenty thousand dollars; it is, therefore, not unreasonable to suppose, that the increase in the receipts for 1834 will be at least in the same ratio as the previous years, when the track and harbor were in an unfinished state, and the whole works covered with mechanics and laborers. Should this be the case, the company will be enabled to complete their works, extinguish their debts, and give a good dividend at the close of the coming year.

During the present year the following works have been completed, to wit:

1. The harbor, with the exception of a small part of the breakwater.

2. A large car house.

3. An engine house.

4. Double and treble tracks at both ends of the road, to facilitate the arrival and departure of the cars.

5. A large platform to avoid manual labor in loading the cars at the city end of the track.

6. Ten new cars for passengers.

7. The Venetian blinds of the Washington Hotel.

8. Filled up a large extent of the company's property, thereby trebling its value.

9. A bath house for the people of color.

And the company have bought or imported the following machinery:

1. The locomotive engine Creole, and a large number of freight cars.

2. A lathe, and the necessary tools for the engines and forge.

3. A drudging machine.

The drudging machine has the double advantage of preserving a proper depth of water in the harbor, and of supplying the company with materials to fill up their lots, thereby greatly increasing the value and utility of both; about fourteen thousand superficial feet have already been filled up.

The company is now amply supplied with all the machinery required for the transportation of freight and passengers. A third locomotive engine has been ordered, to prevent the possibility of a stoppage; and the forge is provided with lathes and the necessary tools to keep the machinery in proper order, and to repair any part of the engines which may give way.

A few months will now suffice for the completion of the whole works; the board of directors will then be enabled to direct their undivided attention to the proper application of the immense mechanical power under their control. I am, very respectfully, your obedient servant,

JOHN HEWLETT, President.

UNDULATING RAILWAYS have attracted much attention and discussion in England. The inventor, Mr. Badnall, has met with great opposition from various sources; he has, however, steadily pursued his labors in perfecting his invention, and at the same time kept up a controversy, always in a gentlemanly, yet decided tone, with his opponents, until he has demonstrated, by actual and repeated experiments, its entire practicability. So well, indeed, has he satisfied those who have witnessed his experiments, that Mr. Stephenson, the distinguished engineer of the Liverpool and Manchester Railroad, has joined him as a partner in civil engineering.

In Nos. 46 and 50 of Vol. 2, we gave, from a London paper, some account of experiments made on the Liverpool and Manchester Railway

by Mr. Badnall, to test the correctness of the undulating principle as contended for by him.

They were not, however, given at length in the London paper, and therefore we re-publish them from the London Mechanics' Magazine, as given by Mr. Badnall himself, and we shall publish several articles from the Mechanics' Magazine, to explain more fully Mr. Badnall's views and theory, that the subject may receive in this country the consideration which its importance demands.

Further Experiments on the Liverpool and Manchester Railway, to determine the correctness of the Undulating Railway System.

SIR,—Since I had last the pleasure of addressing you, we have been enabled to try some further experiments on the Liverpool and Manchester railway, the decisive result of which will, I doubt not, fully establish, in your mind and in the public opinion, the merits of the undulating principle.

On Wednesday last, the 16th instant, we met as before on the Sutton inclined plane. On this occasion it was agreed by the engineers present, viz., Mr. Robert Stephenson, sen., the Messrs. Dixons, Mr. Dagleish, and myself, that the truth and validity of the principle, as well as the comparative advantage to be derived from its adoption, would be effectually determined by the following test:

As great a velocity as possible being attained by the engine and load, before reaching a given point near the foot of the inclined plane, the time was to be accurately ascertained which the train occupied in ascending from that point to a state of rest.

The power being thus reversed, the time was to be accurately measured which the train occupied in descending from a state of rest to the point from which it had previously ascended.

Hence it would be obvious, that if the descent were made in less time than the ascent, the velocity generated at the foot of the plane would be proportionably greater than the velocity of the ascending train at the same point, and, consequently, the demonstration would be clear that the engine and train would not only have ascended to an opposite elevation equal to that from whence it fell, but to a greater one, the extent of which would be in proportion to the velocity attained.

Experiment 1.—The "Liver" engine, and a load of thirteen waggons (weighing in all 72½ tons,) after traversing a distance of three-fourths of a mile to acquire a sufficient velocity, ascended the inclined plane 278 yards, the time occupied in performing the ascent to a state of rest being 90 seconds, viz. velocity at foot of plane being about 12.60 miles per hour, and the average velocity about 6.30 miles per hour.

Experiment 2.—The power being reversed the engine and train descended 278 yards, viz. from a state of rest to the point from which they had previously risen, in 50 seconds. The velocity at the foot of the plane being about 22.70 miles per hour—average velocity about 11.35 miles.

Experiment 3.—The engine and train having traversed ¼ mile to generate velocity, ascended to a state of rest, viz. about 278 yards in 75 seconds. Velocity at the foot of the plane being about 14.12 miles per hour—average velocity about 7.6 miles.

Experiment 4.—The power being reversed, the descent of 278 yards was accomplished in 40 seconds. Velocity at the foot of the plane being about 23.32 miles per hour—average velocity 14.16 miles.

Experiment 5.—The ascent of 278 yards was made in 80 seconds. Velocity at the foot of the plane being about 14.22 miles per hour—average velocity 7.11 miles per hour.

Experiment 6.—The descent of 278 yards was accomplished in 49 seconds. Velocity at the foot of the plane being about 23.22 miles per hour—average velocity about 11.61 miles per hour.

AVERAGE.		
Total spaces passed over to generate maximum velocity before ascending.	Times occupied in ascending 278 yards.	
Experiment 1.....1,320 yards.....	90 seconds.	
Experiment 3.....1,320 yards.....	75 seconds.	
Experiment 5.....1,320 yards.....	80 seconds.	
Total, 13,960 yards.....	245 seconds.	
Average, 1,320 yards.....	81½ seconds.	
Total spaces passed over in generating maximum velocity in descending.	Times occupied in descending 278 yards.	
Experiment 2.....278 yards.....	50 seconds.	
Experiment 4.....278 yards.....	40 seconds.	
Experiment 6.....278 yards.....	49 seconds.	
834 yards.....	139 seconds.	
278 yards.....	46½ seconds.	

From the preceding statement it appears, that the utmost average maximum velocity which the Liver engine could attain on this occasion, at the foot of the plane, after traversing a distance of 1,320 yards, was about 13.926 miles an hour; by which means, the power being continued, she was enabled to ascend an inclination of 278 yards.

On the other hand, it appears that the same engine, with the same load, (the steam being kept up in every instance to a pressure of about 50 lbs. to the inch,) generated a velocity, after descending 278 yards, of about 24.488* miles per hour, evidently proving that the engine and train would not only have mounted another summit of equal elevation to that from whence it fell, but would, at the highest point, have been travelling at a velocity of more than ten miles an hour, with the full means of increasing that velocity to any desired extent over the succeeding undulations.

Although the preceding experiments had, to the satisfaction of all present, decided the superiority of the undulating principle, I was anxious to know the result of a trial with a double load. I therefore proposed (it being too late on hour on this occasion) to attain, on a future day, a velocity of twenty miles an hour, with a double train of goods and two engines. I had, on several occasions, published my opinion of what that result would be, and I have now the satisfaction of adding the particulars of this important experiment, which, I need not say, more than confirms all my anticipations.

On Sunday morning last two locomotive engines, viz. the "Firefly" and the "Pluto," left Manchester with a train of loaded waggons, weighing 150 tons, exclusive of engines and tenders, the whole length of the train being about 155 yards.

On arriving at the Sutton inclined plane, it was determined to adopt the same method as on the last trials, of proving the merits of the principle. Our reason for appointing Sunday for this meeting will be obvious, when it is considered how dangerous and inconvenient it would be to try experiments with such a load on any other day, when the trains are almost constantly passing and repassing.

It may be known to some of your readers, that the French government have lately appointed a certain number of their most eminent engineers to visit this country, with a view of acquiring all requisite information, preparatory to the construction of several intended French lines of railway.

These gentlemen, nine in number, were present on this occasion; their names were as follows: Mons. Navier; Mons. Goubeau, Juge-mont des Ponts et Chaussées; M. Arnollet, Ingenieur en chef du Ponts et Chaussées, a Dijon; M. Eugene Nuneann, Ingenieur des Ponts et Chaussées, No. 1 Rue Castiglione, Paris; Mons. Dausse; Mons. L. L. Vallee, Ingenieur en chef des Ponts et Chaussées; Mons. J. Moistard, In-

The velocity in these instances is calculated from the average number of seconds occupied in ascending and descending; thus, 278 yards being = about 61 of a mile, we have the descending line $46\frac{1}{2} \times 61 = 2834$ and $3,600 \text{ seconds} \div 2834 \times 2 = 24.488$ maximum velocity.

genieur de la Marine; Mons. Paris, Lieutenant de Vaisseau; Mons. K. Mamgan.

The English engineers present were Mr. R. Stephenson, sen., of Manchester, (with whom I have recently entered into partnership as civil engineers,) Mr. Dagleish, sen., Mr. Dixon, sen., Mr. Dagleish, jun., and myself. In addition to whom were many other individuals deeply interested in railways, and of general scientific acquirements, among whom were Mr. Case, of Summer-hill, near Liverpool, Mr. Garnett, of Manchester (editor of the *Guardian*), and others.

The following statement cannot fail to form an interesting part of your publication:

Experiment 1.—Two locomotive engines, the Firefly and the Pluto, being attached to the train above mentioned, and having traversed a distance of one mile, to generate a sufficient velocity, arrived at the point from whence the ascent was to be measured, at a velocity of about 20.28 miles per hour. The Pluto then left the train, and the Firefly alone ascended with the load (working the whole way) to a distance of 575 yards, 116 seconds—average velocity being about 10.14 miles an hour.

Experiment 2.—The power of the Firefly being reversed, the engine and load descended 575 yards in 74 seconds. The velocity at the foot of the plane being about 31.70 miles per hour—average velocity about 15.85 miles per hour.

Experiment 3.—The Firefly and Pluto having traversed the same distance as before, generated, at the foot of the plane, a velocity of about 14.34 miles per hour. The Pluto then left the train, and the Firefly and load ascended (power working) 315 yards in 90 seconds—average velocity about 7.17 miles per hour.

Experiment 4.—The power of the Firefly being reversed, the whole train descended 315 yards in 65 seconds. Maximum velocity 19.82—average velocity 9.91.

Experiment 5.—The same engines and load, working about $1\frac{1}{2}$ miles to generate velocity, attained at the foot of the plane a velocity of about 18.32 miles an hour. The Pluto left as before, and the Firefly and load rose 457½ yards in 102½ seconds—average velocity about 9.16 miles per hour.

Experiment 6.—The Firefly and train descended 457½ yards in 80 seconds. Maximum velocity 23.22 miles per hour—average velocity 11.61. N.B. In this instance some delay occurred in reversing the power, which will account for the comparative difference in time.

Throughout the whole of these experiments it will be seen the results were so much in favor of the undulating system, that it was evident a far greater load than 150 tons could be moved by the Firefly, at an average velocity of 15 miles per hour from one summit of a curve to another. The dip of inclination being about 1 in 99, and the total length of the undulation varying from 630 to 1,150 yards.

This led me to propose a further experiment, and I think I may safely add, that one more important in result was never before tried in any country.

Experiment 7.—The two engines, as before, attained at the foot of ascent a velocity of about 19.04 miles per hour. The Pluto then left the train, and, at the same moment, the Firefly shut off her steam. The whole train then rose by momentum alone (the weight of the train, including engine and tender, being near 164 tons,) to the distance of 323 yards in 70 seconds—average velocity about 9.52 miles per hour.

Experiment 8 and last.—The Firefly and train descended 323 yards (power working) in 66 seconds! Velocity at foot of the plane being about 20.04 miles per hour—average velocity about 10.02 miles per hour.

Thus the preceding experiments most unquestionably prove two most important facts—not only that a given locomotive power can convey from one summit of a curve or undulation, to another summit of equal altitude, double the load which that same power can convey at

the same velocity on the level; but that a given locomotive engine can convey, from one summit of a curve or undulation to another summit of equal altitude, double the load which it is capable of moving on a level at a like velocity (see last experiment), by the employment of the steam force throughout only half the distance!

These results lead me to go one step farther. It is my opinion, that if such a weight were to be added to the 150 tons moved on this occasion, as would be a maximum load for three locomotive engines on a level at 15 miles an hour, the Firefly alone (her power being equal to either of the other engines) would move the whole train from one summit of a curve to another of like altitude, at an equal average velocity, viz. 15 miles per hour.

If any of your readers, whether witnesses or otherwise of these interesting experiments, can correct any error of opinion or of statement in allusion to them, I shall be exceedingly happy to recognize and acknowledge it. In the mean time I think, Sir, I may congratulate myself upon having stamped, by this letter, a value that will be long appreciated on the correspondence (*pro* and *con.*) which your Magazine contains on this subject; and I am as happy in feeling that every individual who witnessed the recent experiments was fully satisfied with the importance of the results, as in believing that, in defiance of prejudice and long-formed erroneous opinions on this subject, the public will before long acknowledge, appreciate, and be benefitted by the "UNDULATING PRINCIPLE."

I am, sir, with great respect, your very obedient servant,
RICHARD BADNALL.

P. S.—I have not yet seen your last Number. "S. Y.'s" remarks in the previous one shall be noticed. In the mean time, he does me injustice in supposing I have ever indulged one contemptuous feeling toward him. I could not indulge it to a worm—much more to an individual whose good motives, in a scientific discussion, I have never questioned, and in answer to whose remarks I have bestowed time, attention, and labor.

The following communication, from Mr. J. L. Sullivan, refers to a subject of great importance to this country, and especially to this city. We have heard much of Mr. Blanchard's steamboat for ascending rapids in rivers, without ever having seen a description of it. The following communication will, we hope, attract the attention of those who are experienced in such matters, and have leisure to furnish us with their views for publication.

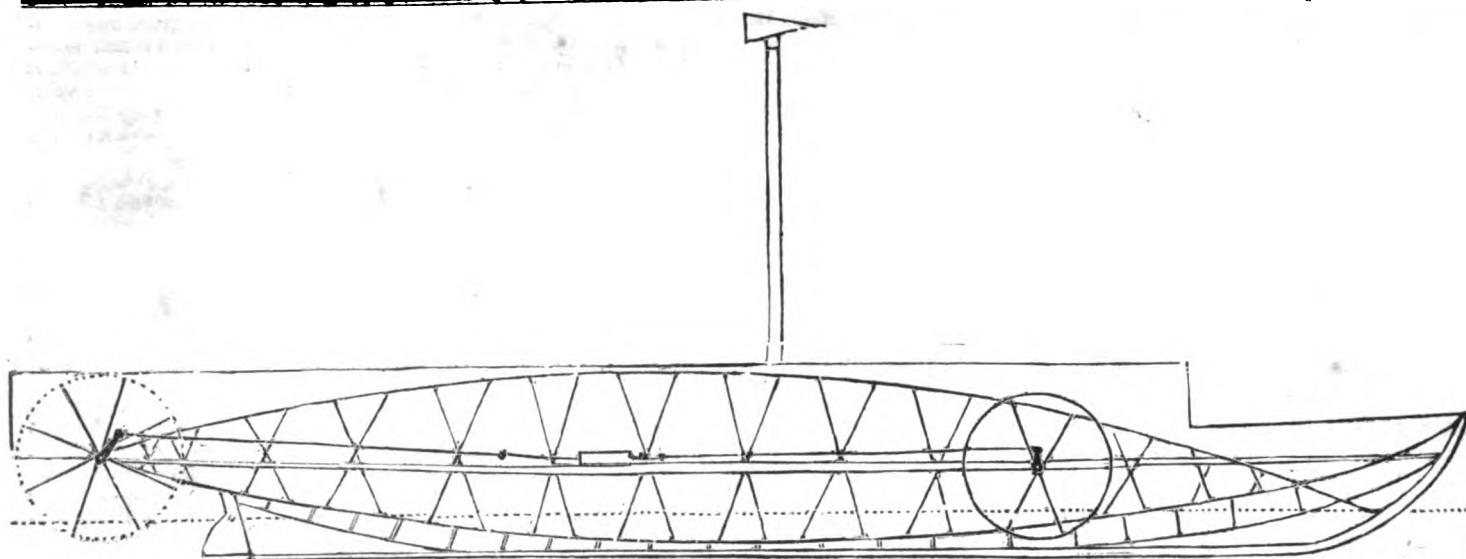
Blanchard's Allegany River Steamboat. [Communicated for the American Railroad Journal.]

To the Editor:

Sir,—If, in announcing the twin boat on Burden's plan, it could have been stated that it had run up rapids so heavy in descent that a canal had been actually made around them where the fall is in fact eight feet a mile, it would have been admitted that "a New Era" in steam navigation had indeed commenced; and this is but a correct description of the performance of *Blanchard's boat* on the Connecticut, between Hartford and Springfield, passing up Enfield falls, daily, the summer past.

This sort of steamboat is the same that has made a passage up to Olean Point from Pittsburgh. Others have since been built for constant business elsewhere: the Allegany route not yet being reached from New-York by the westward bound freight.

But I am led at this time to bring it into recollection and notice, as an interested party, from seeing, in one of your last numbers, mention of an improvement by Mr. Langdon, of Troy, in which some reliance appears to be placed on the principle of strength combined in Blanchard's patent; and more especially also, from seeing the purpose of Pennsylvania, avow-



ed by one of her Senators in Congress, to cut off all our western trade. There can be no question that such is the intention of Philadelphia, and there is much reason to fear that they are much nearer to effecting it than we are in New-York aware of.

The navigation of the Allegheny with light and powerful steamboats, together with an immediate connection of this river by a railroad with the Erie canal at Buffalo, could prevent it; and more effectually when the great railroad in contemplation from this city to the lake, touching the head of that river at Hamilton, shall be made; and then the branch to Buffalo, (50 miles,) would serve both to connect the canal with the river, and to connect that city with New-York by a good winter route.

I am not, however, the only interested party; all who wish New-York to retain a good share of the western trade must feel interested in the subject.

Having been on the Allegheny while a member of the United States Board of Engineers for Internal Improvement, and having been early in life practically engaged in improving river navigation, I then considered this route as of very great consequence to the commerce of New-York, and very easily made navigable for steamboats of a light draft of water; and when Blanchard's experiment thereon was announced, a few years later, sought and contracted for his services and the right of his invention exclusively for the companies I might form for its use; for others as well as for the Hudson and for the Delaware and Raritan canal trade, as permitting of an extensive communication with the southern waters—for if a short canal were made in North Carolina from Cape Fear river to the Waccamaw in South Carolina, and from Winyaw Bay to the Santee, and a marsh cut made around Bull's Bay, there would be steam navigation inland from New-York to Georgia.

The peculiarity of Blanchard's boat, which assures to it great speed, is the combination of means to construct a very light hull, having extraordinary vertical strength, so as to be able to carry a stern wheel, and much more than usual power in proportion to size. It may be said to combine ship carpentry and house carpentry with the principle of the arched bridge. This mode of construction, it will be seen by the prefixed sketch, distributes the stress over the whole fabric. A great vertical force may bear on the arc frames; and if much longitudinal impulse is received, it is at their extremities. Even the cylinders of the engine are borne by these arc frames; and the action and reaction of the power is all included within them. The shell of the hull buoys up or carries the machinery, without being relied on to bear any strain.

Suppose two arcs of a circle of which the

cord is rather longer than the length of the boat. Suppose them vertical and opposed, united at the extremities, and the curve preserved by braces in the form of an X; and that close to each brace a screw bolt ties the two arcs together, pressing on the ends of the braces, somewhat let in. Such a frame placed vertically would be immensely strong to resist perpendicular pressure. Two such frames, thus placed parallel to each other, resting on the floor timbers, and connected with the beams and ribs, makes a very stiff yet very light vessel; and the timber employed being acted on lengthwise, may be very small, yet abundantly strong in that position.

The frames or arcs project astern far enough to bear the wheel, the weight of which is sustained, consequently, by the whole of the hull, even to the head; and thus the wheel may be placed so as to act in the dead water of the wake, producing there much more effect than close up. The cylinders are horizontal, and connected with the arcs, which bear their weight and action. The boilers also are placed so as to be borne by the arcs; and if the boat is for canal use, they are in-board in rooms separated by a very strong *glancing shield*, to guard against explosions, though otherwise effectually guarded against. If for rivers, they are placed on the guards, and outside of the shields. On rivers there may also be *side wheels*: and for rapids, where the current is too swift, Blanchard's invention to push or set the boat forward is applied. This is powerful enough even to lift while it pushes ahead, and is a combination very useful on the Ohio in a low state of the water.

This branch of navigation is becoming too extensive and valuable in our country not to have made safety a very important point. Besides the shield to glance off an explosion, the use of a float, with mechanism to ring a bell in the boiler itself, when the water gets too low, is another precaution: another, to cause similar machinery to open valves to give notice by steam: another, a self-regulator of the supply: another, to prevent sediment and concretions on the bottom, (of which I shall give you a description in a future article.) We have, besides, several improvements in the boiler to use anthracite, reducing the quantity so as to make it about one-third the expense of pine wood; so also as to apply the fire without internal flues.

The Allegheny boats can use the coal of the upper branches of this river, as well as that obtained at Pittsburg. A branch railroad to Buffalo would carry coal to the lake boats. A twin boat would not be so safe for the Allegheny as a single one. The liability of a twin boat to strike aground, or against another vessel or obstacle, suddenly with one of the hulls, causes the momentum of the other (a force equal to

the weight thereof multiplied into its velocity) to rend itself separate. And two hulls that are so heavy as to sink, if filled, doubles the danger, because the sinking of one upsets the whole. Whatever depresses one more than the other, disturbs the steering; but a single hull may heel without diminishing the power of the helm.

It seems reasonable to think that a single hull, with very ample power, will be the swiftest vessel, because she may receive the form and proportions nearly which Nature gives to quick swimming fish. Naval architecture has taken this hint, and follows it out as far as is consistent with the stability of sailing vessels. One that is shaped the same at both ends, cannot sail as well as when gradually diminishing aft from the forward third. Since the resistance to the velocity is well known to increase in much higher ratio than the speed, the lighter the draft the greater promise of rapidity, as flat vessels sail fastest before the wind.

On a large scale, Blanchard's boat may have uncommon breadth and adaptation to the Ohio; and on the Hudson she may have both stern and side wheels. The more breadth of paddle applied, the less depth will be required, and the more advantageous the application. The cylinders may be upright for the side wheels, and horizontal for the stern wheel; all sustained by the arcs: and by thus distributing or dividing the power, more may be employed. The weight of an engine increases in a greater ratio than the power, therefore three engines would comprehend a greater proportion of power to weight, than one or two.

The resistance sustained by a body moving in a fluid, is proportioned to the square of its velocity, and the area of its section immersed. Whatever the shape of the vessel, her displacement of water must be a quantity equal to her weight. In point of draft, or section immersed, nothing is gained by a twin boat; but in point of resistance, something is lost. In his work on the Steam Engine, Mr. Renwick observes that "an obvious advantage will be gained by increasing the size of the vessels, for the resistances vary as the square of similar dimensions, while the tonnage increases with their cubes."

It is evident that a boat upon Blanchard's plan, as broad and long as Burden's, and 32 feet wide, would draw but half as much water, and present no more cross section; and while the resistance would be the same, minus the friction of two sides, she would have the advantages of not parting the water at so much depth, and of avoiding by her shape the retarding force following or occurring at the stern. Burden's are 8 feet diameter.

For these reasons mainly, which are in their nature, indisputable, I am led to think that Blanchard's kind of boat with stern and

side wheels must be very favorable to the effect of the power, since with that of the stern wheel only, they perform so well.

In reference to the commerce of the west, this steam-boat evidently possesses the properties demanded by the rapidity of some parts of the Allegany, and the shallowness of some parts of the Ohio in the summer season. It is of great consequence, indeed, that as the New-Orleans market is not much sought from the north at mid-summer, the western trade on the Ohio, the Cumberland and the Tennessee, and even the Missouri, may advantageously rely on a direct and cheap way to a northern port.

This route is the more important, since the avowed intention of Pennsylvania, because the hope cherished by some that a canal might be made or allowed by that state along the shore of the Allegany, cannot be expected, *contrary to the interest of Philadelphia.*

But it may be said here, as it has been said there, in the Quarterly Review, that the railroad from New-York to Allegany river, "will become a permanent portion of national wealth, and not only add to the comfort and riches of the present generation, but exert an influence upon the remotest posterity. Of all the sources of national wealth, internal commerce is not only the most secure, but the most productive. Nations that are merely agricultural are proverbially poor. It is far otherwise when the enterprise of the industrious is directed to every object."

"All the means which facilitate both personal communication, and a cheap and rapid interchange of commodities, are of the utmost value and importance: They have been so regarded by all enlightened nations; and in truth, the attention that has been paid to them is one of the surest criterions by which to judge of the advance a people has made in civilization. Progress in the Fine Arts is a far less certain indication of refinement than roads and inland navigation."

Such are the opinions entertained in Philadelphia, where practice evinces their acceptance throughout the state.

Permit me now briefly to consider the practical effect of this navigation of the Allegany combined with the use of the railroad from hence thither, in its way to lake Erie, compared with the useful effect of the railroad without these steamboats.

The lake being closed in the spring, nearly as late at Dunkirk, where the road will terminate, as at Buffalo, about two months more of lake navigation will belong to the communication through Pennsylvania; but as the Allegany and the Ohio are open earlier than the Pennsylvania canal can be, unless a very mild winter, much freight that would have gone by the way of Philadelphia to the central west, or to the centre of Ohio by the lake, will descend the Allegany and pass from Cincinnati north, in less time, and probably at less expense. The consequence will be that New-York retains her full share of the western commerce rather more advantageously than Pennsylvania can by her canal, though in a milder region.

Let us consider the distances and time, which I do with the more confidence from knowing the ground by observation.

It is most probable that this route will avail of the Harlem railroad as far as opposite Rockland, gaining the shore of Hudson by following that of Harlem river, and crossing, pass thence to Ramapo valley, (unless the Company should avail of the Paterson railroad to reach the same point, the ground being favorable; this, however, is leaving the state.)

To Ramapo may be called - - 35 miles.
Thence to Florida, in Orange, - 24 "
Thence by Deer Park Gap, in Shawangunk mountains, and across Sullivan county, to the Delaware, - 60 "
Up the Delaware - - - - 20 "
Across to the Susquehanna - - 16 "

Westward down along the Susquehanna, and up along the Chemung, - - - - - 110 "
Canestoe to Angelica - - - - 20 "
To Olean - - - - - 30 "
315 "

Thence by the Allegany to Pittsburgh, descending 2½ feet in a mile, in all 630 feet.

The time, at 8 miles an hour on the railroad, will be - - - - - 40 hours.
Down the river - - - - - 20 "
To Cincinnati, 439 miles, at 12 miles an hour - - - - - 37 "
97 "

In the spring of the year, when the water is high, the passage down must be even quicker, and the merchants are then solicitous to reach home early with their purchases.

In the autumn, after the 1st October, the Allegany will be deemed safer than the lake, and the river will be open later than the canal. There will be two months earlier access to the New-York market for produce from the west this way than by the lake.

It will be important that the boats be powerful. The speed of steam freighting, even on the Hudson, makes up for the cheapness and slowness of sloop navigation, which averages four days, while the tow-boats run the passage regularly in 24 hours. The navigation of the Allegany will be at least half as important to the state as the Hudson itself.

But no time is to be lost in defensive measures against the vigorous enterprise of Philadelphia. She will, if we delay, have accomplished her works, completed her system of interception, and bound the West to her capital in fetters of credit. The wishes even of the western people of that state will be frustrated. The expedient that will take least time, is to connect Erie canal at Buffalo with the bend of the Allegany in Cattaraugus, as our leading statesmen think. The distance is 50 miles, and one track might be soon made. But to wait for a canal to be made from Rochester to Olean, however useful the work, involves too much delay as a defensive measure.

This railroad might be considered a branch of the main line in reference to the winter travel, or practically so. To use again the language of the Quarterly Review, "A populous state, willing to pledge its resources for the redemption of loans, can alone command that confidence which will justify investment of the property of individuals, or what is of even more importance, will draw to our country the wealth of foreign capitalists."

This remark is applicable and encouraging to the southern states. Public investment may be compensated in the effects. Erie canal doubled the price of produce in the western counties. When such works are accomplished by public credit, the loans may be paid off by selling stock to private capitalists, who can then buy in, because immediate returns warrant it.

The difference between our country and others, is, that their resources are swallowed up in the necessity of maintaining large standing armies. Our country only wants cheap transportation to be prosperous. It has been well remarked, that "When a state enters into a system of internal improvement, if the completion of the public works shall add to the value of individual property as much as they cost, the state is no loser (if they receive no revenue); but if besides, they pay the interest of the cost, the whole expenditure becomes clear profit."

Humble as may be the instrument described in this article, it can hardly be doubted from experience thus far, that it really commences a "new era" in the art, when steamboats will conquer the difficulties of rapid rivers, and combining the means of safety, traverse the

great arc of the Union, from the head of the Allegany to the head of the Tennessee. For this reason an Albany company might commence this operation, if the railroad company should not do it in anticipation of the accomplishment of their work. J. L. SULLIVAN.

P. S. There has lately been an improvement in steam boilers, made by Mr. L. Disbrow, and owned by him and Joseph Goddard, Esq., and tested in the steamboat of the Delaware and Hudson Canal Company, by which there is a saving made, compared with wood, of 45 to 50 per cent. in the expense of fuel.

It consists of a number of conical furnaces, the base of which is the grate, the apices connected by a small flue. These all immersed in the water and half full of coal, make a steady and strong fire. They are fed near the top of the cones, by horizontal openings.

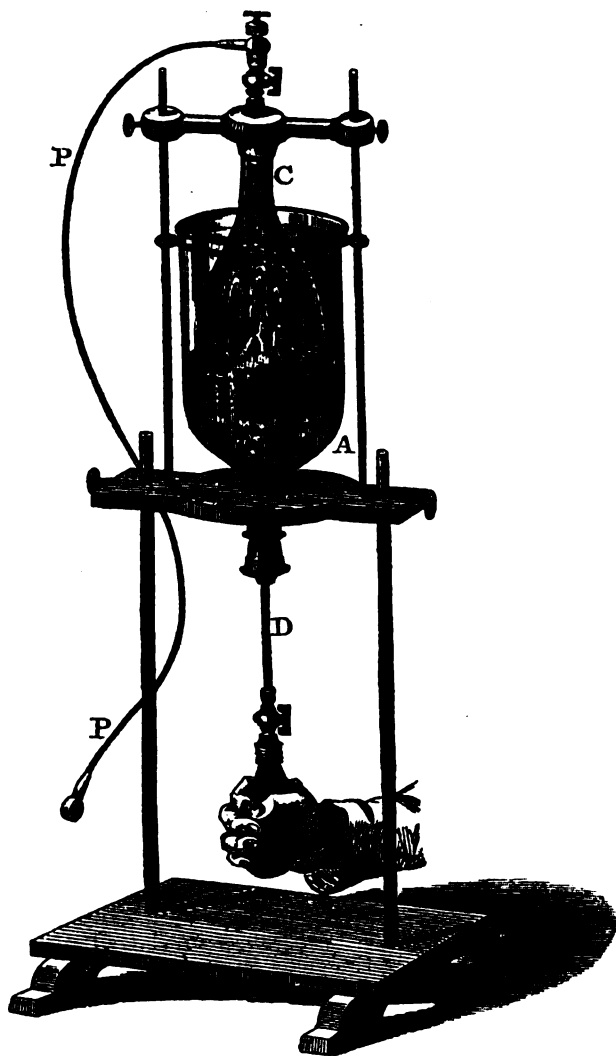
On the Preservation of Timber, &c. By A. B. [For the American Railroad Journal.]

SIR,—I will contribute a little of my experience, which satisfies me that the plan of the Black Rock railroad will answer well. In 1823 I laid a hemlock plank on the surface of ground, corresponding with a grade prepared for a railroad. Without grass or vegetation, dirt had accumulated so as to be about even with the upper surface, except at one end, which had become covered with gravel. Last season, after the plank had lain ten years, I had occasion to take it up. I expected to find the under side rotten, but found the whole plank as sound and hard as if it had been under cover. The use of it was to walk upon from the kitchen door. A. B.

RAILWAY BETWEEN AMSTERDAM AND COLOGNE.—The Prussian journals say that an iron railroad will be made between Amsterdam and Cologne, that the work will be confided to Lieut. Col. Bake, of the Dutch engineers, and that a Dutch civil engineer, named Braede, is already engaged in the preparatory surveys. The plan has already received the sanction of the kings of Prussia and the Netherlands.

PERCUSSION LOCKS FOR THE ARMY.—A committee, consisting of three officers of artillery, is now actively engaged at Woolwich in a course of practical experiments, of which the object is to ascertain the propriety, or otherwise, of introducing percussion locks for the army, in lieu of the present flint and steel. No report is, we hear, to be made to government till the firing of 24,000 rounds of cartridges shall have afforded grounds for a decided opinion.

WATER IN FLOUR.—Most important researches have recently been carried on in Paris by MM. Payen and Persoz, on the several points in the chemical history of bread, flour, and grain. Their observations are not yet published in detail; but we select the following as being one of the very highest commercial dietetic importance. They have found that 100 parts of flour, sold as dry, and imparting no moist stain to blotting paper, contain, under atmospheric circumstances, 19 per cent. of water, and but 89 of dry nutritive matter; that flour exposed to moist air contains as much as 23 per cent. of water; that the finest flour employed by the bakers contains 16 per cent. under ordinary circumstances. In summer these proportions are reduced, but they are remarkably increased in moist weather. Thus, the quantity of flour which, by weight, at the rate of 5 per cent. of water, would produce 150 lbs. of bread, will produce but 127½ lbs., when the same weight of flour is purchased in long continued wet weather. The prices of flour should, consequently, in all seasons, be based on the quantity of dry matter it contains, and which a simple and rapidly performed experiment would exactly indicate. Thus, by placing 100 grains of flour on a plate, and heating them on a vessel of boiling water for one hour, the loss sustained will denote the precise quantity of water mixed with the flour.—[Universal Corn Reporter.]



Apparatus contrived by Dr. Hare for separating Carbonic Oxide from Carbonic Acid, by means of Lime Water. [From the Mechanics' Magazine.]

Lime water being introduced in sufficient quantity into the inverted bell glass, another smaller bell glass, C, is supported within it, as represented in this figure. Both of the bells have perforated necks. The inverted bell is furnished with a brass cap, having a stuffing-box attached to it, through which the tube D, of copper, slides air-tight. About the lower end of this tube, the neck of the gum elastic bag is tied. The neck of the other bell is furnished with a cap and cock, surmounted by a gallows screw, by means of which a lead pipe, P P, with brass knob at the end suitably perforated, may be fastened to it, or removed at any moment. Suppose this pipe, by aid of another brass knob at the other extremity, to be attached to the perforated neck of a very tall bell glass filled with water upon a shelf of the pneumatic cistern, on opening a communication between the bells, the water will subside in the tall bell glass, over the cistern, and the air of the bell glass, C, being drawn into it, the lime water will rise into and occupy the whole of the space within the latter. As soon as this is effected, the cocks must be closed, and the tall bell glass replaced by a small one filled with water, and furnished with a gallows screw and cock. This bell being attached to the knob of the lead pipe, to which the tall bell had been fastened before, the apparatus is ready for use. I have employed it in the new process

for obtaining carbonic oxide from oxalic acid, by distillation with sulphuric acid in a glass retort. The gaseous product consists of equal volumes of carbonic oxide and carbonic acid, which being received in a bell glass, communicating as above described by a pipe with the bell glass C, may be transferred into the latter, through the pipe, by opening the cocks. As the gaseous mixture enters the bell C, the lime water subsides. As soon as a sufficient quantity of the gas has entered, the gaseous mixture may, by means of the gum elastic bag and the hand, be subjected to repeated jets of lime water, and thus depurated of all the carbonic acid. By raising the water in the outer bell, A, the purified carbonic oxide may be propelled, through the cock and lead pipe, into any vessel to which it may be desirable to have it transferred.

GALWAY.—The population is, we believe, above 40,000; of these a lamentable number is in a state of pauperism. The annals of Galway are carefully preserved from the year 1280, and afford most interesting details. It was once a great depot for Spanish wines.

The Galway females of the peasant class are fond of red petticoats and flannel or frieze jackets. The Wexford ones of blue striped linsey. But there is another much more distinguishing and important mark between them. In Galway, the Irish language is in very general use; so much so that, in many districts, English is hardly understood. In Wexford, Irish is totally unknown.—[Quarterly Journal.]

Animal Mechanics, or Proofs of Design in the Animal Frame. Continued from page 72. [From the Library of Useful Knowledge.]

Fig. 5.



By all this, we see, that if the skull is to be considered as an arch, and the parietal bones as forming that arch, they must be secured at the temporal and sphenoid* bones, the points from which they spring. And, in point of fact, where is it that the skull yields when a man falls, so as to strike the top of his head upon the ground?—in the temples. And yet the joinings are so secure, that the extremity of the bone does not start from its connections. It must be fractured before it is spurred out, and in that case only does the upper part of the arch yield.

But the best illustration of the form of the head is the dome.

A dome is a vault rising from a circular or elliptical base; and the human skull is, in fact, an elliptical surmounted dome, which latter term means that the dome is higher than the radius of its base. Taking this matter historically, we should presume that the dome was the most difficult piece of architecture, since the first dome erected appears to have been at Rome, in the reign of Augustus—the Pantheon—which is still entire. The dome of St. Sophia, in Constantinople, built in the time of the emperor Justinian, fell three times during its erection; and the dome of the cathedral of Florence stood unfinished 120 years for want of an architect. Yet we may, in one sense, say that every builder who tried it, as well as every laborer employed, had the most perfect model in his own head. It is obvious enough, that the weight of the upper part of the dome must disengage the stones from each other which form the lower circle, and tend to break up their joinings, and consequently to press or thrust outwards the circular wall on which it rests. No walls can support the weight, or rather, the lateral thrust, unless each stone of the dome be soldered to another, or the whole hooped together and girded. The dome of St. Paul's has a very strong double iron chain, linked together, at the bottom of the cone; and several other lesser chains between that and the cupola, which may be seen in the section of St. Paul's engraved by Hooker.

* In the Greek, *sphenoid*—in the Latin, *cuneiform*—like a wedge, because it is wedged among the other bones of the head; but these processes, called wedges, are more like dovetails, which enter into the irregularities of the bones, and hold them locked.

The bones of the head are securely bound together, so that the anatomist finds, when every thing is gone, save the bone itself, and there is neither muscle, ligament, nor membrane of any kind to connect the bones, they are still securely joined, and it requires his art to burst them asunder; and for this purpose he must employ a force which shall produce a uniform pressure from the centre outwards; and all the sutures must receive the pressure at one time, and equally, or they will not give way. And now is the time to observe another circumstance, which calls for our admiration. So little of accident is there in the joining of the bones, that the edge of a bone at the suture lies over the adjoining bones at one part, and under it at another, which, with the dovetailing of the suture, as before described, holds each bone in its place firmly attached; and it is this which gives security to the dome of the cranium.

If we look at the skull in front, we may consider the orbits of the eye as crypts under the greater building. And these under arches are groined, that is to say, there are strong arched spines of bone, which give strength sufficient to permit the interstices of the groinings, if I may so term them, to be very thin. Betwixt the eye and the brain, the bone is as thin as parchment; but if the anterior part of the skull had to rest on this, the foundation would be insufficient. This is the purpose of the strong ridge of bone which runs up like a buttress from the temple to the lateral part of the frontal bone, whilst the arch forming the upper part of the orbit is very strong; and these ridges of bone, when the skull is formed with what we call a due regard to security, give an extension to the forehead.*

In concluding this survey of the architecture of the head, let us suppose it so expanded that we could look upon it from within. In looking up to the vault we should at once perceive the application of the *groin* in masonry; for the groin is that projection in the vault which results from the intersection of two arches running in different directions. One rib or groin extends from the centre of the frontal bone to the most projecting part of the occipital foramen, or opening on the back of the head; the other rib crosses it from side to side of the occipital bone. The point of intersection of these two groins is the thickest and strongest part of the skull, and it is the most exposed, since it is the part of the head which would strike upon the ground when a man falls backwards.

What is termed the base of the skull is strengthened, if we may so express it, on the same principle: it is like a cylinder groin, where the rib of an arch does not terminate upon a buttress or pilaster, but is continued round in the completion of the circle. The base of the skull is irregular, and in many places thin and weak, but these arched spines or ribs give it strength to bear those shocks to which it is of course liable at the joining of the skull with the spine.

CHAPTER II.

MECHANISM OF THE SPINE.—The brain case is thus a perfect whole, secure on all sides, and strengthened where the exposure to injury is the greatest. We shall see, in the column which sustains it, equal provi-

sion for the security of the brain; and what is most admirable, there is an entirely different principle introduced here; for whereas, in the head, the whole aim is firmness in the joinings of the bones, in the spine which supports the head the object to be attained is mobility or pliancy. In the head, each bone is firmly secured to another; in the spine, the bones are not permitted to touch; there is interposed a soft and elastic material, which takes off the jar that would result from the contact of the bones. We shall consider this subject a little more in detail.

The spinal column, as it is called, serves three purposes: it is the great bond of union betwixt all the parts of the skeleton; it forms a tube for the lodgment of the spinal marrow, a part of the nervous system as important to life as the brain itself; and lastly, it is a column to sustain the head.

We now see the importance of the spine, and we shall next explain how the various offices are provided for.

If the protection of the spinal marrow had been the only object of this structure, it is natural to infer that it would have been a strong and unyielding tube of bone; but as it must yield to the inflexions of the body, it cannot be constituted in so strict an analogy with the skull. It must, therefore, bend; but it must have no abrupt or considerable bending at one part, for the spinal marrow within would in this way suffer.

By this consideration we perceive why there are twenty-four bones in the spine, each bending a little; each articulated or making a joint with its fellow; all yielding in a slight degree, and, consequently, permitting in the whole spine that flexibility necessary to the motions of the body. It is next to be observed, that whilst the spine by this provision moves in every direction, it gains a property which it belongs more to our present purpose to understand. The bones of the spine are called *vertebræ*; at each interstice between these bones, there is a peculiar grisly substance, which is squeezed out from betwixt the bones, and, therefore, permits them to approach and play a little in the motions of the body. This grisly substance is inclosed in an elastic binding, or membrane of great strength, which passes from the edge or border of one vertebra to the border of the one next it. When a weight is upon the body, the soft gristle is pressed out, and the membrane yields: the moment the weight is removed, the membranes recoil by their elasticity, the gristle is pressed into its place, and the bones resume their position.

We can readily understand how great the influence of these twenty-four joinings must be in giving elasticity to the whole column; and how much this must tend to the protection of the brain. Were it not for this interposition of elastic material, every motion of the body would produce a jar to the delicate texture of the brain, and we should suffer almost as much in alighting on our feet as in falling on our head. It is, as we have already remarked, necessary to interpose thin plates of lead or slate between the different pieces of a column, to prevent the edges (technically called *arrises*) of the cylinders from coming in contact, as they would in that case chip or split off.

But there is another very curious provision for the protection of the brain: we mean the curved form of the spine. If a steel spring, perfectly straight, be pressed

betwixt the hands from its extremities, it will resist, notwithstanding its elasticity, and when it does give way, it will be with a jerk.

Such would be the effect on the spine if it stood upright, one bone perpendicular to another; for then the weight would bear equally; the spine would yield neither to one side nor to the other, and consequently there would be a resistance from the pressure on all sides being balanced. We, therefore, see the great advantage resulting from the human spine being in the form of an italic *f*. It is prepared to yield in the direction of its curves; the pressure is of necessity more upon one side of the column than on the other; and its elasticity is immediately in operation without a jerk. It yields, recoils, and so forms the most perfect spring; admirably calculated to carry the head without jar or injury of any kind.

The most unhappy illustration of all this is the condition of old age. The tables of the skull are then consolidated, and the spine is rigid: if an old man should fall with his head upon the carpet, the blow, which would be of no consequence to the elastic frame of a child, may to him prove fatal; and the rigidity of the spine makes every step which he takes vibrate to the interior of the head, and jar on the brain.

We have hinted at a comparison betwixt the attachment of the spine to the pelvis and the insertion of the mast of a ship into the hull. The mast goes directly through the decks without touching them, and the heel of the mast goes into the step, which is formed of large solid pieces of oak timber laid across the keelson. The keelson is an inner keel, resting upon the floor-timbers of the ship, and directly over the proper keel. These are contrivances for enlarging the base on which the mast rests as a column: for as, in proportion to the height and width of a column, its base must be enlarged, or it would sink into the earth, so, if the mast were to bear upon a point, it would break through the bottom of the ship.

The mast is supported upright by the shrouds and stays. The shrouds secure it against the lateral or rolling motion, and the stays and backstays against the pitching of the ship. These form what is termed the standing rigging. The mast does not bear upon the deck or on the beams of the ship; indeed, there is a space covered with canvas betwixt the deck and the mast.

We often hear of a new ship going to sea to stretch her rigging; that is, to permit the shrouds and stays to be stretched by the motion of the ship, after which they are again braced tight; for if she were overtaken by a storm before this operation, and when the stays and shrouds were relaxed, the mast would lean against the upper deck, by which it would be sprung or carried away. Indeed, the greater proportion of masts that are lost are lost in this manner. There are no boats which keep the sea in such storms as those which navigate the Gulf of Finland. Their masts are not attached at all to the hull of the ship, but simply rest upon the step.

Although the spine has not a strict resemblance to the mast, the contrivances of the ship-builder, however different from the provisions of nature, show what object is to be attained; and when we are thus made aware of what is necessary to the security of a column on a moveable base, we are prepared to appreciate the superior provisions

* Although they are solid arches connected with the building of the cranium, and bear no relation to the surfaces of the brain, the early craniologists would have persuaded us that their forms correspond with the surfaces of the brain, and indicate particular capacities or talents.

of nature for giving security to the human spine.

AGRICULTURE, &c.

A NEW MODE OF REARING ASPARAGUS.—

The asparagus seed should be sown from the middle of March to the last of April, in a rich spot, (not too much exposed to the mid-day sun,) one inch deep, and the seed one inch apart; after they come up, to be kept clear of grass and weeds during the summer, by hand weeding; to be dug up the next fall or spring—(I prefer the spring, as the roots do not grow during the winter, if set out in the fall, and are liable to be killed by a severe winter,) and set in beds prepared as follows: Dig out the size of the beds nine inches deep—cover the bottom three inches deep with rich marl, (which has been my practice,) though I believe that oyster shells half burned will be as good, as it is intended as a lasting heating manure, to protect the roots in winter, and force the vegetable early in the spring: then put three inches deep of coarse stable manure, then three inches of rich earth. This brings the beds on a level with the surface of the earth. Next lay off the beds in rows eighteen by twelve inches apart, and put a single eye or spire in each spot where the lines intersect, and cover them three inches deep with rich earth. Plank the sides of the beds, as this prevents grass and other roots from running into the beds, and also keeps the outside roots from being exposed, by the sides of the beds washing away. The beds should be kept clean by hand weeding, and all the earth and manure used in making them should be perfectly free from grass roots and noxious weeds. In the fall of the year, after the seeds have matured, cut the tops off close to the beds, (being careful that not a single seed is left to vegetate on the beds,) as they have already as many roots as the space they occupy should contain, and if additional roots are suffered to form from year to year from the falling of the seed every fall, the beds will soon be so much clustered with roots that the vegetable must degenerate, at least in size and length, as the new roots form near, or on the surface. Some prevent this by burning, but I think the best way is to pick them off by hand, before the ball that contains the seed breaks. You then top dress the beds with coarse stable manure, let it lie on all winter, and in the following spring rake off the coarsest part, and fork in the remainder, being careful that the fork does not touch the roots. Pursue this course two falls, and early in the third spring, before the beds are forked up, put on two inches of light well rotted manure—fork it with the stable manure, then put on from three to four inches deep of clean sand from the river shore, and you will cut in the month of April the best vegetable we have in Virginia. I would not give my beds for the balance of my garden. I think there is much in the kind of seed. I obtain my seed from New-York; they were marked "giant asparagus."

The cover of sand is important on several accounts; its being a great absorber of heat and moisture, so soon as the vegetable gets through the soil, it is hastily thrown through the sand to the surface in a bleached tender state, and the cutting from day to day is more uniformly of the same tender delicious vegetable. The sand also prevents grass from growing on the beds, which obviates the necessity of so much hand weeding during the season for cutting, by which the beds frequently become trampled, and the vegetable that is about to come through the surface mashed down, which not only destroys the spires that are so trampled on by the gardener in the process of hand weeding, but (I think) injures the root. The sand should be laid in the alleys between the beds, in the fall, when the beds are about to receive the top dressing of stable litter to keep them warm through the winter; and in the sand is about to be replaced in the

spring, it should be passed through a sieve of such size as will not let the balls (that contain the seed) pass through. This will be another means of preventing the seed from vegetating on the beds. There is a practice very prevalent with gardeners, to plant lettuce, radishes, and other early vegetables on the beds; this should never be done, and particularly with radishes, as they have a long root that extends to the roots of the asparagus, and must seriously interfere with them.

I frequently cut asparagus from three to five and a half, and once I cut a spire six inches in circumference, and from five to eight inches long; it could have been cut longer, but it is never tender near the root.—[Farmer's Reg.]

MANURING IN DRILLS.—A friend of mine, who I hope is now better employed, who was a man of general science and a practical and scientific farmer, exerted himself for thirty years to improve a poor sandy farm—by the method of manuring which I am about to mention; he effected more for it in the five years which preceded his death, than had been accomplished in the other five and twenty. From the shore of a saltwater sound to which the farm was contiguous, he littered his farm with sea ware. In the fall, he laid off with a plough the field which he intended for the next year's crop of corn, in trenches seven feet apart, twelve inches in width and six in depth. The plough traversed the same furrow until the trench was sufficiently wide and deep—its sides were made by the bar of the plough. Those trenches were then filled with sea ware from the farm yard, and stable manure; the latter placed in the bottom of the trench, and making from a tenth to a sixteenth part of the combination: the trenches were then covered with the plough, and upon the ridges thus formed, the crop of corn was drilled the succeeding spring. After the laying by of the corn crop, the field had a year of rest, after which the intervals between the corn rows were treated and used as the rows had been. The advantages of that manner of manuring are manifest. Almost all the fertilizing properties of the manure which escaped whilst becoming decomposed, fed the crop—the bed of the manure was not broken open, nor was it exposed to evaporation, until the soil had become "seized in its demesne as of fee" of all its treasures, save those which had already produced food for man and beast. A few manurings in that way will make a very poor field of any susceptibility rich.—[American Farmer.]

FERMENTED MANURE.—A writer in the Northern Farmer gives the following indirect proof against his own theory, by stating what old experienced farmers believe. Says he,—

"Strange as it may seem, many old farmers yet believe that old rotted manure promotes vegetation better than fresh, or unfermented manure! They appear to be ignorant of the fact, that the longer manure remains exposed to rot, the less nutriment or food for plants it retains; and the more it becomes assimilated to mere earth."

SAVING PEAS AND BEANS FROM MICE.—Chop up the tops of last year's shoots of furze, and sow them in the drill.—[Gardener's and Forester's Record, No. 3.]

CLEANLINESS OF THE DUTCH.—As to cleanliness, every dwelling-house is a model and a pattern; they seem to vie with each other on this point. The cowhouse is pure and clean, not a particle of filth being to be seen in it; the cows are as clean as if they were in a dining room; the milk and cheese houses, and in short every part of the house, are free from dust and dirt of any kind; the manure is placed at a convenient distance from the cowhouse, behind the house, and every particle is carefully collected together. The whole apartments, even the byre and

hay-house, are generally under one roof; and the cleanly system, and the admirable arrangement, give that comfort and pleasure which are too often wanting in this country.

MANAGEMENT OF CALVES IN HOLLAND.—

From the fact that Hollanders are distinguished for their dairy husbandry, their management of calves is deserving of attention. We find the following in the Transactions of the Highland Society of Scotland:

The most approved method of treating the calf is as follows: It is immediately after its birth taken from the cow, put in a separate place, and laid on dry straw. A little salt is given, and the tongue and mouth rubbed with it. It is also rubbed clean with straw. After the lapse of six or eight hours, the first beesting of the mother cow, diluted with one-third water, is given to the calf to drink, and this treatment is continued for some days, the liquid being given thrice a-day. Thereafter, during two or three weeks, they give the calf the milk as it comes from the cow, diluted with one-fourth water, in which now and then a small handful of sand is put; then churn-milk is gradually given, and it is supplied with hay; at the age of ten weeks it is brought out to the meadow, where it is also supplied with skimmed milk, churned milk, or whey. In this way each farmer raises the proper number of quey calves to fill up vacancies; but calves fattened for sale have milk from the cow three times a day.

For some days after calving the cow is milked thrice a day, and they then return to the usual practice of milking twice a-day.

BLACK TONGUE.—We scarcely open a newspaper from the country, without meeting a paragraph or a communication respecting a disease in horses and cattle called the *Black Tongue* or the *Burnt Tongue*. It is said to prevail chiefly among horses, but is not uncommon among cattle. Some respectable physicians have given their opinion, that if any person who was taking care of animals afflicted with this distemper, should get any of the matter of the diseased tongue into an eye or a flesh wound, it would be a very serious affair, and might prove fatal. We have heard that several persons in the country are now suffering under an inflammation from this cause.—[Boston Courier.]

BURNED TONGUE.—This disease, which we mentioned in our last, and for which we gave recipes, has become very prevalent in this and some other sections of the State. It is undoubtedly an epidemic, as it attacks those which have not been near or exposed to those suffering with it. Hogs, horses, and cows, all have it.

At first, it appears like a blister upon the tongue, or in black patches upon the lips. The animals appear sluggish, drool, and eat hay with difficulty: sometimes, they refuse all nourishment, and seem averse to drinking. Water, whether cold or warm, when drank, brings on an ague fit, and they tremble and shiver exceedingly. Some of the horses have been attacked in the feet. A swelling and eruption commences at the top of the hoof, accompanied with evident pain and soreness.

We have treated one case of this kind successfully by washing the feet with warm soap suds—then by a weak solution of chloride of lime, and a bandage soaked in pigs' foot oil. A very weak solution of oil of vitriol, used as a wash, has been successful in those cases where it has been tried. Physic of some nature should be freely used.—[Maine Farmer.]

POKE BERRIES.—Dr. R. R. Harden states, in the Southern Planter, that he has found these berries to be a certain cure of epilepsy.

NEW-YORK AMERICAN.

FEBRUARY 23—MARCH 1, 1834.

LITERARY NOTICES.

No. XVI.

Prairie Ronde, (Kalamazoo co. M. T.) Dec. 26.

"Stranger will you take a cocktail with us," called out a tall athletic looking fellow to me as I was making my way through a groupe of wild looking characters assembled an hour since around the fire by which I am now writing. There was a long haired "hoosher" from Indiana, a couple of smart looking "suckers" from the southern part of Illinois, a keen-eyed leather-belted "badger" from the mines of Ouisconsin, and a sturdy yeomanlike fellow, whose white capote, Indian mockasons and red sash proclaimed, while he boasted a three years residence, the genuine *wolverine*, or naturalized Michigianian. Could one refuse to drink with such a company? The spokesman was evidently a "red-horse" from Kentucky, and nothing was wanting but a "buck-eye" from Ohio, to render the assemblage as complete as it was select. I was in the midst of the first real prairie I had ever seen—on an island of timber, whose lee while making slow headway for the last two hours, with a biting breeze on my beam, it had been my whole object aim and ambition to get—a comfortable bar room, a smoking "cocktail"—a worshipful assemblage (Goldsmith's Club was a fool to it) had never entered my dreams! Could I refuse to drink with such a company? The warm glass is in my frozen fingers. The most devout temperance man could see no harm in that! It is touched smartly by the rim of the Red-horse. It is brushed by the Hoosher. It rings against the Badger—comes in companionable contact with the Wolverine, "my respects to you gentlemen and luck to all of us."

Here was a capital commencement with just the sort of sallad of society, I have been long wishing to meet with, having as yet only tasted its component parts in detail. But auspicious as was the beginning, I nearly got into a difficulty with my new acquaintances a few moments afterward, by handing the landlord a share of the reckoning, and I took back the coin forced upon me, with many apologies upon my part for having presumed to pay part of a "general treat," while laboring under the disqualifications of being a stranger. Room was then courteously made for me by the fire-place, and accepting a pipe, proffered by one of the company, a few whiffs made me sufficiently sick and at home to lay it by without further ceremony. "There's a smart chance of cigars there in the bar, stranger, if you'd try some of them," said one of the hoshers, "yes," echoed the other "and they are a heap better than those pipes." "I allow" rejoined another of the company "but I wish that fellow would shut the door; he must think we were all raised in a saw-mill, and then he looks so peert whenever he comes." "Poor fellow," ejaculated one who had not yet spoken, "he is considerably troubled with youngness."

"From the eastern side, stranger," said another to me, "I'm told it's tolerable frog pasture. Now here the soil's so deep one can't raise any long sarce—they all get pulled through the other side. We can winter our cows, however, on wooden clocks, there's so many Yankees among us," &c. &c.

A scattering conversation was kept up in similar quaint expressions for sometime, but as Mr. Hackett has already given the cream of western phraseology in his highly original part of "the Kentuckian," I will not tire you with enumerating more of those which fell under my observation. These unique terms, indeed, were poured out so copiously, that it was impossible for one's memory, though elastic as a pair of saddle bags, to retain them. At last a *train* and a couple of carioles drove up to the door, and I discovered, upon their bundling merrily into these vehicles, that the whole company were

bound for a wedding. "Jim," cried one driver to another, snapping his whip, "let our horses run near the silk." Jim cracked his snapper, and the light carioles taking the lead, the more humble train skimmed rapidly after them: their dark shadows were soon lost upon the moonlit prairie, and the sound of their bells died away in the distance by the time I had regained my now solitary seat by the fire.

I have had but a sorry time since leaving the agreeable company, I spoke of in my last. To day indeed the weather though cold and windy has been clear. But on the two previous, I rode for the whole time through alternate snow and sleet which the wind at times blew so directly in my face as to make it almost impossible to proceed. In one instance while making my way through a dense forest of 12 or 14 miles between the openings without a cabin by the way, my horse stopped suddenly and looking about ten paces ahead, I saw a couple of deer standing immediately in my path and gazing on me with the most perfect unconcern—but my fingers were so numb with cold that I was unable to cock my gun while the timid creatures slowly retired within the depths of the forest. The Kalamazoo wound through this wood, but the under growth of timber was so very heavy that its waters though within a few yards of me were rarely discernible—and their ample flow when seen, as now swollen by the troubled current of Battle Creek and other tributaries, though capable of bearing boats of considerable burthen, possessed less charms for me than when I first struck the slender rill as it leaped unsullied from its virgin fountain, and went singing on its course. Still it was with regret, when at last ferried over the Kalamazoo, so long my only companion, that, on turning my horse's head to the south, I took leave of its Arcadian banks for ever. I passed the previous night at the little hamlet of Comstock, where an enterprising young gentleman, after whom the place is called, having the advantage of a good country, is creating a flourishing establishment around him; a frame store and several log cabins, with two or three mills, already giving some importance to the site in a new country. My ride of to-day, having started late, brought me about sunset a distance of 20 miles to the verge of Prairie Ronde; the intermediate country consisting partly of burr, oak plains, broken sometimes by the short round hills I have before described to you, and partly of broad grassy meadows running sometimes into marshes and again watered by some clear stream whose sandy bottom would contrast strongly with its low sedgy brink.—The ground became higher and firmer as I approached Prairie Ronde and then after riding for a few miles through the openings, when I expected to descend upon a broad meadow somewhat resembling the many I have seen in Michigan fully answering to my pre-conceived ideas of a Prairie, I came suddenly upon an immense piece of cleared table land some 50 feet above a pretty Lake in its vicinity. The scattering houses around its borders with the island of timber in the centre, and the range of six or seven miles of prairie on every side (assured me that this was Prairie Ronde, while the piercing blast which as the sun sunk redly on the opposite side, rushed out from his western resting place and blew the snow drift in my teeth, made me eager to cross the waste as rapidly as possible and sufficiently accounts for the pleasure with which I entered this hospitable tavern. The collection of houses which stand sheltered by this wood, is called "Schoolcraft." The wood itself, though only 5 or 600 acres in extent, has a small lake in the centre, and the village, if not the whole settled part of the Prairie, is distinguished by the number of fine running horses, blood dogs and keen sportsmen, it has, in proportion to the population. Fox hunting, on horseback, with full packs of hounds, is the favorite sport though wolf, bear, and badger baiting have each their active followers. The soil is so easy of

culture and so generous in its product, that the settlers after attending to their necessary avocations have ample leisure for their many recreations. Prairie Ronde though like all parts of Michigan in a great measure settled by emigrants from the state of New York, is said to count a still greater number of its residents from nations of the south and west. The population generally was perhaps fairly represented at the assembly to which I so unceremoniously introduced you at the opening of the letter.

Niles, (Berrien Co., M. T.) Dec. 23.

I have been now for two days in the St. Josephs county, considered among the finest in Michigan, having, since I wrote the above, traversed the counties of St. Joseph and Cass, watered by the St. Joseph's river, which is the most imposing-looking stream I have yet seen. A ride of 14 miles from Prairie Ronde brought me first to its banks, which, rising occasionally 40 or 50 feet above the water, in a sudden bluff, look higher than those of any river I have yet described to you. You must already have gathered from my attempts at portraying Michigan scenery, that neither the grand, the picturesque—hardly even the romantic—are to be numbered among its characteristics. "The beautiful" comprehends them all: and yet you can readily imagine, that that beauty is neither tame nor monotonous, which can shine through the dreary months of winter, and make the half frozen and solitary traveller almost forget its rigors. It is true that one brought up in a more rugged and broken country might often miss the mountain tops leaning against the sky,—might sigh for the sound of a cascade, and long once more to plant his foot upon a cliff; and yet, where would the eye more delight to wander, than through these beautiful groves, which in summer must stretch their green arcades on every side? Where rest more happily, than on those grassy meadows on which their vistas open? These streams, too, that sparkle so over their golden beds, are they not substitutes for the rushing torrents of more mountainous countries? or does the lichen-covered crag tempt one's footsteps more than this teeming soil, when nature has carpeted it with the myriad of wild flowers which the summer's scene calls forth? To no scenery of our country that I have yet seen, is the term 'Arcadian' more applicable than to the rich and fairy landscape on the western side of the Peninsula watered by the Kalamazoo and the St. Josephs.

The latter stream, when I first beheld it, was filled with floating ice, which the deep and rapid tide brought down with such force, that my horse recoiled with affright, when I attempted to urge him into the current, at a point where an old woman told me was the usual place of fording. A rope ferry a quarter of a mile further on, removed the difficulty, and finding my way along a rich bottom where the trail was so encumbered with vines that it was difficult, even at this season, to keep it, I hailed a grim-looking Charron, with a shock head of hair, attired in a green hunting-shirt, who was standing in the door-way of a cabin on the opposite side, and crossing for me in his scow, I was soon conveyed with my Bucephalus across the wintry torrent. The country now became gradually more populous as I approached the village and prairie of White Pigeon. I had travelled 14 miles in the morning without seeing the sign of a habitation; and as one meets with neither travellers nor emigrants at this season, there is some company, even in the smoke of a chimney, though you do not stop to warm your fingers by the fire beneath it. I expected long before this to have fallen in with a most agreeable companion in a gentleman of the country, whom I met with at Detroit, and who is a considerable proprietor on the St. Josephs. Having a fine taste for natural scenery, and being one of the best rifle shots of whom I have ever heard, I anticipated

much pleasure and advantage from his company and guidance through the nearer sections of the Peninsula. But my journey through Michigan is now nearly finished, as it began, entirely alone. At White Pigeon, where I found quite a pretty village of four years growth, I seemed, in getting upon the stage route from Detroit to Chicago, to get back once more to an old country. I found a good tavern and attendance at Savary's, and discovered, by the travellers going north and south, that travelling was not as yet completely frozen up. There are a great many English emigrants settled upon this prairie, who, I am told, are successfully introducing here the use of hedges instead of fences, in farming. They are generally of a respectable class, and seem to be quite popular with the American settlers.

The morning was fine when I left White Pigeon to-day; and as the sun shot down through the tall woods, nothing could be more cheering than my ride among the beautiful hills of Cass county. The road, which is remarkably good, meanders through ravines for a distance of many miles, the conical hills resting upon the plain in such a manner as barely to leave a wheel track between them, except when at times some pretty lake or broad meadow pushes its friths far within their embrace. A prairie of some extent was to be traversed on this side of these eminences, and the floating ice on the St. Joseph's was glistening beneath its shadowy banks in the rays of the cold winter morn when I reached its borders, and arrived at Mr. Olds' tavern in this flourishing town of Niles. Myne host, who does not seem to be the most accommodating person in the world, has refused to provide supper for myself and two other gentlemen at so late an hour, assigning, as a reason, that "his women are not made of steel"—an instance of cause and effect which I merely put upon record as being the only one of the kind I have met with in all Michigan; and it is somewhat remarkable after the ready accommodation which, during all my rambles, I have met with, at all hours, from the cabin of the humblest settler, to find that money cannot command a meal at an established stage-house. It was impossible, however, to give myne host one's real opinion of his fitness to keep a tavern, when several gentlemen of the place present, very politely seemed to take the circumstance much more to heart than do they who are as much amused as vexed at the incident. My fellow sufferers appear to be both agreeable men, and as we are to travel in company to Chicago, &c. the sympathy arising from our present melancholy condition may insure a pleasant intercourse under happier auspices.

The county of Cass, through which I have passed to-day, has a population of more than 2000, and contains 7 prairies of 6 or 8 miles in diameter, besides many smaller ones. They produce, when cultivated, from 30 to 80 bushels of new corn, or 40 of wheat, to the acre. The mode of planting the former is to run a furrow, drop the corn in, and cover it with a succeeding furrow, which is planted in a similar way, and the field is rarely either ploughed or hoed after planting. There are several pretty lakes in this county; but it is not so well watered as St. Joseph's, through which I passed yesterday, which for local advantages of every kind, as well as fertility of soil, is generally considered one of the best in the Peninsula. I like Kalamazoo county, however, as much as any part of Michigan I have seen. I am now within 8 or 10 miles of the Indiana boundary, and some twenty or thirty only from the shores of Lake Michigan, having described nearly a semi-circle in my tour through the Peninsula, including, with some deviations, the counties of Wayne, Monroe, Lenawee, and Washtenaw, on the east, Jackson in the centre, and Calhoun, Kalamazoo, St. Joseph's, Cass and Berrien, on the west; and I have not met a resident in that whole range but what was pleased with the country,

and I may almost say attached to its soil. The females indeed will sometimes murmur, and in some remote places I have heard those whose conversations indicated that they had not been brought up with the most ordinary advantages, complain of "the want of society!" But even these would love to dilate upon the beauties of the country when the flowers were in bloom. Others again who would prove an ornament to any circle, would sigh at one moment for the comforts and elegancies of their maternal homes, while their eyes would kindle with enthusiasm the next, when speaking of the appearance which the woods around their new dwellings wore in summer. Small communities form but slowly in a country where the settlers, instead of gradually pushing their way together into the depths of the forest, as at the Eastward, drive their wagons in any direction a hundred miles through the openings, and plant themselves down a day's journey apart, just where their fancy prompts them. This will account for my so often lighting upon a pleasant hamlet after a day's travel through a perfect wilderness. The river St. Joseph's debouches into lake Michigan in this county; and as a steamboat will probably run the next season from the town rapidly growing at its mouth, to Chicago, a Railroad from Detroit to this steamboat harbor, is only wanting to bring the visiter of Niagara within a few days' travel of Chicago, and carry him through the flowery groves of Michigan to one of the most important points in the Union, and what may be termed the central head of the Mississippi Valley. Delmonico may then stock his larder with grouse from the meadows of Michigan, and Gassin try his skill upon the delicious fish that swarm her lakes and rivers (would that I could at this moment witness some of their curious orgies) while sportsmen will think no more of a trip hither than they do now of an excursion to Islip, Rayner South, or Patchogue. In the mean time I have secured you the seeds of more than 20 varieties of wild flowers, which I shall send to their destination as soon as possible, lest from the rapid increase of internal communication they shall lose half their value from ceasing to be a variety.

HISTORY OF THE RISE AND PROGRESS OF THE ARTS OF DESIGN IN THE UNITED STATES. By WILLIAM DUNLAP.—This, though a work in *posse* and not yet in *esse*—is one towards which we have for some time desired an opportunity of calling the attention of our readers—and asking their encouragement by subscription to it.

Mr. Dunlap's name as an agreeable writer, is familiar to the country. His latest work, the *History of the American Theatre*, met with great and deserved success—and we cannot but anticipate an equal degree of success, for that now under his hands, artist as he is, as well as author—and of which we can furnish no better or more attractive notice than that set forth by himself in his proposals for its publication by subscription.

To trace the progress of Painting, Sculpture, Engraving, and Architecture, in our country, and bring before the Public a connected series of facts, respecting the lives and fortunes of those individuals, whether native or foreign, who have exercised any of these arts in the United States, appears to be an undertaking, which, if executed with moderate abilities, and a strict regard to truth, will form a portion of American History both entertaining and instructive.

The materials collected by the author of this work, will be chronologically arranged, from the early days of our existence as colonies to the present time. To rescue from oblivion or misrepresentation the names of our earliest Artists, and to record the effects produced by the visits of foreign Professors to our shores, appear to be subjects of sufficient interest to command the attention of our citizens generally;—to the great body of Artists now exerting their talents in the Republic, it is a species of knowledge that seems indispensable.

The most ample Biographies of all known Artists, native or foreign, who have exercised their professions in this country, will be given. And when we recur to the names of those who, with West, Copley, and Stuart, have passed away, and to the brilliant constellation which now adorns the United States, it will be seen that the biographical portion of the work will be as extensive, and as much varied in character, as the most eager thirst for this species of knowledge or entertainment can desire.

The writer of this work has had personal knowledge of most of the Artists who will be the subjects of its pages, from West and Copley to the men of the present day. Information and assistance have been liberally furnished from the best sources. Those most conspicuous in our literature and arts, have most freely aided the author. This enables him confidently to promise such a collection of facts on the subjects of which he treats, as could not be submitted to the public from any other pen.

The worth of the work will principally consist in its authenticity. Opinions advanced may be valuable; historical accounts of pictures curious; personal narratives interesting; but facts shall be undeniable—and of such importance to the history of the country, that it would be incomplete without them; for it is presumed, that the history of those arts which civilize mankind, and embellish society, form an essential portion of the history of all nations.

We can add nothing to this simple outline, which could have the effect of enhancing such a work in the eye of the public. We, therefore, only say in conclusion, that the publication is already in a considerable state of forwardness—that it will be comprised in two 8vo. volumes of about 400 pages each, at the price of \$5 dollars—and that we shall very gladly receive at this office the names of any persons disposed to subscribe.

THE AMERICAN JOURNAL OF SCIENCE AND ART, January, 1834; by BENJAMIN SILLIMAN, MD. LL.D. &c. New Haven, HAZEKIAH HOWE & Co.—We referred some weeks ago to the paper of this number which was not then published, that upon the whole will interest most persons—that on the meteoric phenomena of the 13th November last. We shall look with interest for the conclusion in a future number of this paper; though not with much expectation, we confess, of seeing any satisfactory explanation of this extraordinary phenomenon.

THE NEW ENGLAND MAGAZINE, for February: Boston, J. T. Buckingham.—A charming number—light, graceful, spiritual, and withal, sensible. We have hesitated between two or three short and clever articles—Connecticut as it was, the Eating Philosopher, &c. &c.; but have finally settled down—mainly because it was the shoiestest—on Nicolo Paganini:

The Devil came fiddlin' thro' our tuwa.—*Scotch Ballad.*

It is well known of John Bull that he spoils his favorites and then punishes them. He made an Orpheus of Paganini, and then reviled him because he was not born or bred a hero.

This great personage, who looks a good deal like Mephistopheles, gave a farewell concert at Drury Lane, in August last. Though the popular favor towards him had waned, yet the house was crowded. The prints give a pretty good representation of the solemn musician,

"Black he stood as night."

His graceless bow was that of an ill-jointed, paste-board man, and no smile played over the long wrinkles of his visage. He seemed to stand alone in the world—delighting thousands, but having sympathies with none. He is sharp and thin. "The case of a treble hautboy were a mansion for him. His appearance is spectral and impressive.

— "His look
Drew audience and attention still as night,
Or summer's moonlight air."

Music, however, is a forced plant in London—it is a luxury for which men pay largely, as for grapes, and pines; for they cannot raise it. It belongs to Germany and Italy,—to Ireland and Scotland; but not to England. Though Mr. Bull's ears are not over delicate, like Bottom, it pleases him to have them tickled. The strains of Rossini fell upon them with little power; but when the necromancer struck up—albeit, but on one string—"St. Patrick's day, in the morning," the whole assembly was in an ecstasy. The silence, however, was like that of the desert,—every one held his breath till the tune was finished,

and then came forth a burst of applause that would have roused any mortal sleeper. If it should please Paganini to visit us musical Hesperians, let him play many of the simple old tunes, such as delight "the knitters in the sun." He breathes into them a new soul.

Genoa has the glory of giving birth to Columbus and Paganini. A dream of his mother, like most omens, tended to verify itself. An angel appeared to her in a dream, and promised to make her son Nicolo a great player on the violin, who accordingly began upon a fiddle as large as himself, and he gave concerts at nine years of age.

His father believed as much in fortune as his mother in angels; for he was ever dabbling in lotteries. He received more profit from his son's concerts, who, at fifteen, was a travelling meteor, attracting the worship of the musical Italians. His father threatened to slaughter him, unless the profits were given up, and, for a while, Nicolo surrendered them, —about twenty thousand francs.

Soon Paganini had no rivals. Lafont, the Parisian, indeed, courted a trial, and came off shorn of his laurels.

"Strange that such difference should be,
Twixt twiddle dum and twiddle dee."

Success was followed, as in all things, by envy and slanders; and fictions of murders, of the drugged bowl, and the dagger, were believed of Paganini, on no stronger evidence than his physiognomy. A dungeon, it was said, was for years the seclusion, in which he acquired the magic of his art. All men agreed upon the dungeon: there was some difference of opinion as to the nature of his crime. Some ascribed to him the crimes of Salvatore Rosa, and affirmed that he had been a captain of banditti; others softened his offences to those of a simple Carbonare, or to having killed his antagonist in a duel. But the most romantic story was generally believed, that he had murdered his wife or his mistress. These reports, though they were of no advantage to his character, did no injury to his calling: men and women were the more anxious to see him, as they could at the same time be gratified with the hearing of music and the sight of a murderer. A bad name is of great use to a good performer of any kind, and the person that robs him of that often makes him poor in deed. At Vienna, however, Paganini denied the whole story of the incarceration with its adjuncts.

From a memoir we extract the following, which shows a name as widely spread as that of Charles XII. "Italy, from Mont Blanc to Vesuvius, from the heights of Abruzzi to the shores of the Adriatic, resounded with his praise. The strains of his wonderful working violin were borne on the waters of the Danube, till the ocean murmured 'Paganini!'"

THE UNITED STATES REVIEW, No. I. Philadelphia: A. WALDIE. New York: G. & C. & H. CARVILL.—Periodical literature would seem, of all others, best adapted to a busy, inquiring, but not ever studious people, like ourselves. It is of a nature to be taken up at any moment—to be relished at broken intervals—and, by its variety, to catch and fix the attention, even of minds habitually intent upon the varied pursuits of active life. Yet, so far as the matter is understood by the public, this sort of literature does not meet with the degree of encouragement that, a priori, might have been anticipated. The North American Review, the oldest of our Quarterlies, only now, after long years of existences and supported as it undoubtedly has been by much sustained talent, affords a reasonable remuneration to its conductors. The American Quarterly—younger in the field, though not less able—yields not yet any such return for the expense and labor connected with its publication, as to make it an object of any considerable value; and meanwhile, the Southern Review, got up in Charleston, and written with great general ability, but too deeply tinged with peculiar political views, and partly perhaps because of that tinge, after struggling through some two or three years of fitful existence, perished. In the face of circumstances, apparently so little encouraging, we have here the first number of a new Quarterly; and not one of those before mentioned presented itself, we are persuaded, in as prepossessing a shape as this one, in all that regards the mechanical execution of the work, paper typography, &c.—with or more general claim to consideration on the score of its litera-

ry contents.—There is not indeed, any brilliant paper in this number—no one marked by particular and eminent talent—but all the articles are well done—the doctrines inculcated, and the general tone of thinking is such, as liberal and educated men will approve—and the whole scope and spirit of the publication recommend it to public patronage.

The contents are—Art. I. On Anniversary Discourses—in the course of which exception is justly taken to such addresses as—intended for mixed audiences, and for the most part on kindly occasions—introduce debateable topics of politics or political economy—that of Mr. Maxcy, delivered before the Brown University of Providence, and that of Mr. Kennedy, delivered before the American Institute of this city, are cited as bad examples in this particular.—

Art. II. On the Use and Abuse of Political Terms. is quite interesting, and refers to a book which, from the exhibition therein made of it, we hope to see republished in this country; where, *par excellence*, the abuse in question prevails. Art. III. recalls in a kindly manner the poems and prose works of Richard H. Dana. Art. IV. On Anti-Colonial History, annihilates pretty much at one blow Meulton's History of New York, and Heckelwelder's flattering fictions about his favorite race of the Lenni Lennapes. Art. V. is on Mrs. Lee's Memoirs of Baron Cuvier. Art. VI. On Traits and Stories of Irish Peasantry, which are highly praised. Art. VII. On imprisonment for debt—adverse to the law abolishing that remedy.— Art. VIII. On Ancient Art in Egypt and India. Art. IX. On Lucy Aiken's Court of King Charles I.; and Art. X. On the Temperance Cause, which it sincerely but temperately advocates.

THE HEART, DELINEATED IN ITS STATE BY NATURE, AND AS RENewed BY GRACE, by a Presbyter of the Protestant Episcopal Church: 1 vol. New York, SWORDS, STANFORD, & Co.—A skilful moral anatomist has, in this little volume, laid bare the self-delusions of the human heart—its tendency to error and evil while unregenerate—and its consequent need of those proper religious influences, which can alone so regulate its emotions as to render them conducive to happiness here, and fit its possessor for a better world.

THE HEIRESS, a Novel; 2 vols. New York, HARPER & BROTHERS.—Novels have been scarce lately—new ones we mean—and therein consists the best chance for success of this we now announce; which, on other grounds, and amidst active competition, judged on its merits, would hardly run a brilliant career.

A NEW TRAGEDY is to be shortly brought out, as we hear at the Park, under the auspices of Miss Kemble and her father. It is from a native pen, and will not fail, we think—for we have had a peep at the M.S.—aided as it will be by the talents and skill of the Kembles, of brilliant success.

FOREIGN INTELLIGENCE.

FROM ENGLAND.—After Saturday's paper went to press, we received our London files by the New York to the 7th ult. We make from them such extracts as are of interest and we can find room for.

The leading topic is the state of uncertainty respecting the course which Russia may pursue, when apprized of the preparations making upon a large scale, both in England and in France, to have a large naval force in the Mediterranean.

The London Times—from which paper of 6th January, we give a long extract—is of striking a blow, or at any rate making the demonstration so real, that Russia shall not mistake its nature or purpose. The Spectator of 4th January thus comments on Russian affairs:

An article in a German newspaper, the *Allgemeine Zeitung*, on the state of Turkish affairs, and

the policy of Russia, appears to have effected a change all at once in the tone of our Government journals. Thus, on Monday, the *Globe* spoke of the "idle endeavor in some quarters to contrast the language of Louis Philip, in his late speech, with his actions, and to argue, from the improved condition of his army, as well as from the active equipment of ships in our dock-yards, that the intentions of the French and English Governments were not so pacific as their professions." The whole tenor of the *Globe's* remarks was to discourage the idea that Russia would "exasperate both the Great States of the West." But on Tuesday the German papers arrived; and in the article, evidently official, above referred to, it was intimated, that if the French and British fleet was reinforced, Russia would be compelled to arm some vessels. This threat immediately caused our Ministerial organ to assume a warlike tone; and on Wednesday we were reminded that it is the unquestionable intention of Russia to model Turkey into a species of tributary State, or a convenient vassal; that the Porte, under such protectorship, would be rendered subservient to designs hostile to France, England, and all other European states; that Russia has put off the payment of her last instalment of the Greek loan; that no one can be deceived by the smooth tone of the Austrian journal; and finally, that Russian ambition must be resisted "by friendly remonstrance, to rectify sinister intentions, and, if that proved unavailing, the adoption of the stronger alternative." Stronger alternative, of course, means war.

The *Times* spoke out, as usual, with more decision of tone. The necessity of prompt and vigorous measures is insisted upon; "negotiations, despatches, and Lord Ponsonby, and the rest of it," are laughed at; a few broadsides are recommended, as the right kind of protocols to bring Russia back to good manners; and Englishmen are told to bear in mind, "that there is such a thing as settling a dispute in a manner the most satisfactory by administering a good knock-down blow at once."

The conclusion to be drawn from all this vaporizing (which, looking to the actual state of affairs in the East, would have been quite as appropriate last week as the present), is simply this—that Ministers would fain have it believed that they are quite ready for war, and resolved, if necessary, to "strangle the Russian fleet in the cradle of Odessa." The remarks in the Austrian journal, and those which have appeared in the *Times* and *Globe*, are merely newspaper protocols, and as such of very little value. The proceedings of Russia must determine whether we shall go to war or not. If the Emperor is resolved at all hazards to become master of Constantinople, the Euxine, the Levant, and the Adriatic, there seems to be no help for it, and a war must ensue. The policy, therefore, of our Government and that of Louis Philip in making preparations for it, is undoubtedly a sound one. And it was extremely "idle" in our Ministerial organ to endeavor to lessen the effect which those preparations were intended to have upon the designs and proceedings of Russia, by representing the intentions of France and England as being so pacific. The fact is—and now we find it announced clearly enough—that if Nicholas yields, we shall all be good friends; if he persist in his schemes of aggression, our actions will no longer be pacific.

That Russia, will however, hold back, for the present, seems most likely. Excellent reasons may be assigned for her continuing to practice the temporizing policy by which she has hitherto gained so much. It will depend upon the degree of vigilance used by British and French statesmen, whether that policy shall in future be as successful as it has been hitherto.

{From the London Times of January 6.]

The *Journal des Debats* seems to be of opinion that Russia will yield to the remonstrance of Great Britain and France, backed by their preparations for hostilities, and will consequently relinquish the immediate execution of her designs upon the Turkish capital and its neighboring ports. We have no doubt that the maritime preparations of England, and the mixed ones made by France, might, though unaccompanied by any formal remonstrances, have a better effect than merely modifying or suspending the realization of the aggressive schemes entertained by Russia; provided the latter Power could be convinced that the preparations of this portion of Europe were real armaments—that they were calculated for purposes of actual resistance, instead of being what are commonly called "demonstrations,"—measures got up for the sake of intimidating an enemy, and, failing in that object, to be at once laid aside, and followed by humble acquiescence. There is nothing so silly as a "de-

menstration" which bears upon the front of it that it is a demonstration, and nothing more. Wiser by a great deal to do nothing, for in the latter case we save all useless expense, and leave our resources in that respect undiminished. The Tories, combined with the low Radicals, through their daily and weekly prints, are laboring to persuade the people of this country that the period has long since passed at which it would have been possible for England to interpose any serious check to the march of Russian encroachment, and with consistent wickedness they flatter the Autocrat, not only that he is too strong to be resisted, by this country, but that his designs are just and meritorious, and such as he ought not to abandon. This is of a piece with the factious treachery which has encouraged the stubbornness of the King of Holland during these two years, and advised him to hold out against the pacific endeavors of England towards the settlement of the dispute with Belgium. "in hopes that something might turn up," either on the Continent through a war, or by a change of Ministry and the return of Tory councils here in England. We do not deny that in days of yore some examples of the like spirit may have been found to actuate the movements of persons who were not Tories. The memorable instance of Oczakow cannot in common justice be overlooked, when an opposition embassy was despatched to the Empress Catherine, and assurances held out to her that by a due degree of obstinacy she would defeat the plans of the British Government of that day—a council on which she had cunning enough to act; and the consequence was, that Mr. Pitt's resistance to the project of the female Autocrat miscarried, although the other half of the factious undertaking failed, for the Minister retained his office. Why do we recur to these crimes of another generation? To condemn them—to give weight to the stigma with which we would persuade the people of England to visit the present iniquities of the ultra-Tory junta, as manifested in their Dutch, their Portuguese, and the Russo-Turkish counteraction (it is all but treasonable) of the measures adopted by the King of England for the maintenance of British interests and honor. The attempts to keep open the discord of the Dutch and Belgians, in which the English Tories have so largely shared, have hitherto served in no small degree to distract the ears of this Government and of the French from the affairs of Turkey, and to weaken their joint opposition to the Autocrat in that quarter. But the rapid growth of the danger is, we trust, helping out the remedy. We have said that a demonstration once discovered to be a demonstration on the part of these two Governments, is worse than none; of little value, moreover, is a remonstrance carried on in words, and ending in resignation. Russia has so deep a stake in the game she is now playing, that she laughs at the murmurs, and not less at the threats of other Governments, as she will at their noisiest preparations for war, if she have any solid reason to suspect that, after all, no war will be ventured on by the parties making them. So great, besides, is the object aimed at by Russia, and so keen and intense her passion for realizing it, that if she suspend her work to-day, she will resume it to-morrow, entailing on England an incessant course of watchfulness, and extreme uneasiness on the whole European world. The maritime force of this country, therefore, ought to be maintained on a highly effective footing, and not a moment lost in the presence of an enemy so unremitting in his activity, and so powerfully impelled towards the accomplishment of his fatal design.

It is rumored that Austria has given pacific "advice" to Nicholas, which may induce him to desist from this odious undertaking. Austria is the China of the west. Stupid and immovable in the dotage of despotism—hating all knowledge, because dreading all change—Austria "advises" Russia. But will the Czar, untouched by the angry remonstrances of England, be shaken from his purpose by Austrian advice? England must take counsel from her own courage and foresight—they are the sure safeguard of individuals and nations.

We see that M. Pozzo di Borgo on Wednesday last complimented the French King in decorous terms, and delivered some vague prognostics favorable to the continuance of tranquility. It is the policy of Russia, as of all mediators of aggression, to cover ambitious purposes in the garb of peace. The representatives of the French people are, however, at their post. M. Dupin, President of the Chamber of Deputies, thus expresses himself to Louis Philippe—"Peace, as far as it may be possible; but such a peace as you can alone desire—a safe and honorable peace, worthy of the nation."

These are not words which indicate any deep-rooted confidence, in the phrases of M. Pozzo di Borgo. The winter season for the present paralyzes all movements, but half the winter season has gone by.

In France naval preparations on a considerable scale were in progress. The answer to the King's speech was under discussion in the Chamber. The ministers had elected all the officers of the Chamber but one, M. Pirell, the Advocate General, whom they proposed for one of the Vice Presidents, but he was defeated by M. Beranger 165 to 98.

M. Pirell has rendered himself very obnoxious by persecutions of the press.

Sir J. Campbell remained still a close prisoner in the Castle of St. George, Lisbon; and the British Ministry has declined to interfere in his behalf.

The Portuguese quarrel is stationary.

Don Miguel had rejected an offer of mediation, made to him at Santarem, by the Queen of Spain; whose Ambassador, Baron Rameford, had an interview with him on the 17th of last month. General Rodil had made a fresh incursion into Portugal, as far as Braganza, in search of Don Carlos; but only succeeded in capturing some of the Junta who attended him. There are rumors of naval preparations by the agents of Don Miguel; and it seems to be allowed that he has lately been successful in recruiting his army from among the peasantry. In the mean time, hostilities have not recommenced.

In Spain the quarrel assumes more and more the character of a guerilla contest.

The insurgents in Biscay, Navarre, Arragon, and Valencia, are again appearing in considerable force. The Queen's troops had been defeated in some skirmishes; and the rebels were sufficiently strong to make a formidable attack upon Tolosa, on the 26th of December; but were successfully resisted. Zavallo, the General of the Franciscans, who is mentioned as the real leader of the Monkish party, has been negotiating with General Valdez; but he assumes too high a tone to make it probable that an accommodation will be the result of their communication. The Madrid correspondent of the *Times* says—

"It is known that Zavallo was at Bilbao at the time of the death of King Ferdinand; and it was there that, as soon as the intelligence arrived, the insurrection broke out into 'a sudden flood of mutiny.' Judging of the rest of Spain by what he had observed in his own immediate neighborhood, Zavallo had expected that the rising would be general; and it would undoubtedly have been much more general than it has proved, had the Pretender only ventured, when the tide turned in his favor, to show himself in the country. But the time has gone by; and the cause of Don Carlos is not to be saved by all the skill of Zavallo, nor by the high tone he assumes in his correspondence with General Valdez."

In fact, there seems no reason to apprehend serious danger to the Queen's throne from the insurrection; though, from the nature of the support it receives, and the miserable state of the Government finances, it may be extremely troublesome for some time to come. In Madrid, Zea Bermudez is more unpopular than ever; and the new Minister at War, Zarco del Valle, is not in much better odour.

The *Indicateur* of Bordeaux of the 31st ult. has the following from Bayonne, dated the 29th ult.:—"Saarsfield's return to Pampeluna with 3 000 men, having left a similar number at Tafalla, is confirmed. The conduct of this General has appeared very suspicious, not only to the inhabitants of the country, but also to his own troops, who remarked that in his recent march he always took the opposite direction to that of the insurgents. There is also much complaint that Saarsfield has disarmed the forces of Gen. Lorenzo, who occupied Estella. The greater part of the troops of the latter have been replaced by others, who have not given the same proofs of valor, and who are not so accustomed to conquest as those removed. All the Queen's troops are about to march, in order to attack, in every direction, the Carlist bands that are spreading desolation through the country. Of the Valencia faction only forty men remain between that province and Arragon."

STILL LATER FROM FRANCE.—By the Havre, from Havre, we have Paris papers of 8th January. These present the case of the Queen of Spain in a somewhat more favorable aspect; but still without any material change.

There is nothing further of a decisive nature as to Russian affairs: of speculation concerning them and plain talk in the Chamber of Deputies a great deal—of which, with more leisure and space, we will translate portions for our readers.

The *Journal des Debats* in commenting on that part of the President's message which refers to the non-payment of the French indemnity, holds this language: "We hope a legislative vote will soon put an end to the only difficulty which exists to the completion of the treaty concluded with this country. All is not sacrifice for France in this Convention; and the benefits assured by it to our commerce will at least compensate for the payment of a debt against which our integrity would not permit us to plead prescription."

PARIS, Jan. 7. Evening.—The Stock Market has been animated to day, and the price of stocks has experienced a further improvement, which is attributed to a rumor that the Government will have no need to have recourse to a loan. A rumor of the capture of Oporto by the Miguelites has been current, but it produced no effect, as Don Miguel's Loan remained stationary without business.

On Sunday the Ambassadors of all the Northern Powers assembled at the Russian Embassy, when it is said Count Pozzo di Borgo communicated to them a Note he had received from the Minister for Foreign Affairs relating to the affairs of the East.

The *Sentinelle*, of Bayonne, of the 2d inst., has the following extract of a letter of the 25th ult., from Madrid:—"Gen. Quesada has succeeded in destroying all the bands which were formed in Castile. Several of their chiefs have been shot. It was with great difficulty and risk of falling into the hands of the Queen's troops that Merino gained Portugal with 16 of his followers. It is certain that the Queen's army is to enter Portugal, but it must previously be reorganized, for the corps of Morillo and Rodil are not worthy of the name of an army. Some politicians assert that it is intended to drive out Don Carlos and Don Miguel, and to join Don Pedro in establishing the government of Donna Maria throughout Portugal. Others, however, affirm that the Spanish Cabinet has an understanding with France and England for driving out both the pretenders to the throne, and taking possession of the disputed kingdoms. But this is highly improbable, for the Spanish government, which cannot yet be said to be master of its own provinces, is little capable of effecting the conquest of a country defended by the army of Don Pedro, which is much more perfect in the art of war than that of Spain, without reckoning the troops of Don Miguel, which would also act against the invaders. The *Sentinelle* also states the arrival of letters from Bilbao, announcing that a terrible conflict took place on the 30th ult. at Durango, between the Queen's troops, commanded by General Valdes, and the Carlists, under Zubala, in which, it is said, the Christians were beaten, and lost two pieces of cannon."

The Memorial Bordelais of the 3d instant, gives the following, under the date of Madrid, December 25th:—"The troops of Morillo, seconded by the Government, have entered the Portuguese territory, and seized 40 Carlists, whom they have brought into Spain."

A letter of the 30th ult. from Bayonne, states, that General Lorenzo, after a severe contest at Los Arcos, has beaten the insurgents of Navarre, who were compelled to fall back upon Logroño.

LATE AND IMPORTANT.—The Editors of the Daily Advertiser, have received by the Francis Depau, which put into England, and sailed from Falmouth, on 24th ult., files of London papers to the evening of the 18th January, containing Paris dates to the 16th, and Madrid to the 9th, eleven days later than those previously received. It appears, says the Daily Advertiser, that Catalonia has risen en masse, and demanded a Constitution. General Valdez has returned to Spain, and Mina was probably on his way back. The Liberals so long persecuted and exiled have arisen, and are in a fair way of compelling the milder government of the Queen to yield to their determined demands. From Portugal we find nothing of interest. The London Courier, of the 18th

of January says:—The French papers of Thursday speak of the change in the Spanish Ministry, which we yesterday mentioned as one of the rumors of the Stock Exchange. Some of the papers, however, trace it up to the messenger which had arrived at the English Ambassador's. More than one of them speak of this series of events—the demands of Llauder, and the other Captains General, combined with the number of persons who have taken an interest in the proceedings in Catalonia—as a true revolution in Spain. We observe that General Don Jose Valdez, with other Constitutionalists, have returned to Spain from Paris. Mina will probably also now find his way back. The other news from Spain is of trifling importance.

LATEST FROM PORTUGAL.—The Pantaloon arrived at Falmouth on the 17th Jan. from Lisbon, with dates to the 13th. The differences between the Government and the Duke of Terceira were settled. The army of Don Miguel had suffered considerably from sickness. No movement had taken place between the armies. It is stated that Don Miguel's forces were not more than 6000; but the fortifications are so strong that it would require a much greater force to dislodge them.

PARIS, JAN. 16.—It has been remarked that Baron Rothschild makes frequent visits to the Minister of the Finances, the object of which probably is to settle the conditions of the new loan.—[Journal du Commerce.]

The National de 1834 gives the following details upon the communication of Gen. Llauder to the Queen of Spain, which are of considerable interest.—“We are informed upon good authority that the Queen, after having consulted her Ministers, and the diplomatists at her Court, returned, without opening it, the Exposition which General Llauder had sent by Colonel Sans. On receiving it Llauder proceeded to the Municipality of Barcelona, and held a conference as to the next steps to be taken. He proposed a middle course, through which the remonstrance might reach the Queen without offending her; but he received for answer, as on former occasions, that it was too late to retreat, and that, if he did not feel sufficient confidence in himself to sustain with courage the part he had undertaken, he had better quit the Province. Llauder upon this put the packet under another cover, and sent it again to the Queen as she had returned it, without any additional letter. Thus the Governor of Catalonia conducts himself towards the Queen of Spain as one sovereign would towards another, and this exchange of communications assumes a most singular hostility. If any one doubts the truth of the above details, let him apply to the Minister of War, and we are confident he will not contradict them.”

The Memorial Bordalets of the 13th inst. confirms in the following terms the news of the resistance of the Captains-General to the Spanish Government:—“We have received news of the utmost importance, through several different channels. Catalonia has risen in a mass in the name of liberty, under its military chieftain, Llauder. This is the first cry of Constitutional Spain. Llauder has demanded of the Queen, in his own name, as well as in that of the 45,000 armed men which he has at his disposal, liberal institutions. Madrid is tranquil, but disquieted by Llauder's demand. There is reason to believe that several other Captains General, such as Quesada, Valdes, Merillo, are about to demand the dismissal of the Ministry.—We ardently desire the success of this revolution, for such it really is.”

The Indicateur of Bourdeaux, of the 13th inst. has the following from Bayonne, dated the 11th:—“A courier from the British Embassy at Madrid arrived here last night; he left that capital on the morning of the 8th, when all was perfectly quiet, and performed the journey without the necessity of an escort. The courier has important despatches from the Court of St. James's and the Tuilleries, the Captain-General of Catalonia having, in the name of that province, demanded a Constitution of the Regent; the number of signatures to the address is said to be nearly 50,000. This it was which occasioned the dispatch of the courier. By a decree of the Regent, El Pastor had been appointed Brigadier, and consequently is annulled; it is well known that he, as well as Mina and other chiefs, were banished for the attempts made in November, 1830.”

The Vapor of Madrid states that Don Gregorio Alvarez y Perez, a canon and treasurer of the church of Burgos, had been arrested, and was in the chapel preparing for execution, when a courier arrived with his pardon. He was so much affected, by this unexpected clemency, that, immediately on being released, he wrote and published a pamphlet, exposing all the manoeuvres used to mislead the people, and urging them all to range themselves under the banner of their lawful Queen.

PARIS, JAN. 15.—It has been asserted on ‘Change that the Queen, yielding to the necessity in which she is placed, has consented to the convocation of the Cortes, and has changed the Ministry. The President of the new Cabinet is said to be the Marquis de las Amarillas.

This news, whether true or false, produced some improvement in Spanish Stock; the French Funds also recovered a little.

The only news from the frontier that is worth mentioning, is that of a new combat on the 9th with the Carlists, commanded by Zabala; in consequence of which they were again dispersed.

The letters from Bayonne speak also of the arrival at Vittoria of 4,000 recruits, who are to be immediately incorporated with the troops.

Famine in Russia.—The Swabian Mercury gives the following letter from Odessa, dated Nov. 23:—“The general dearth becomes very alarming, and it is impossible to foresee what may ensue. Every article that forms the food of man is becoming daily more and more scarce and dear. Meat alone is cheap, and this is because the granaries are obliged to kill their cattle for want of fodder. There are whole villages in the environs of Odessa that are entirely destitute, the inhabitants having left them, in hopes of finding bread elsewhere. The Sea of Azoff is no longer navigable, so that we have no chance of receiving supplies from the opposite shore. Immediately after receiving despatches from St. Petersburg, Count Woronzow

went off in all haste to Ekaterinodol, where the famine has already caused some deplorable disasters.”

Manufacturing Industry.—All the information we have received from the manufacturing districts leads us to believe that the operations of trade will be materially impaired by the present position of the United States. Almost every letter we have seen from America containing a caution to manufacturing and shipping houses not to send out goods, as there is no money to pay for them. We are glad to find in many instances manufacturers are acting upon this caution.—[Morning Post.]

LONDON, January 18th, 19 o'clock.—Previous to the close of business yesterday afternoon, in the Stock Exchange, an improvement in the Consol Market was expected, the last quotation having been 80½ for the account, at which price it opened this morning. A sudden decline, however, almost immediately occurred, some transactions being effected at 79 for the account; and numerous reports were in circulation relative to the resignation of Lord Grey, which was positively stated to have been accepted, according to some reports, in consequence of a difference upon the Portuguese Question; and to others, upon the Church Reform. Up to the present time, no confirmation of any of the rumors has been received, and a slight advance has taken place in Consols, which are now quoted at 89½.

Half past One.—The Consol Market is again a shade better, the present quotations being 87½ for Money, and 89½ for the account. Bank Stock is 211 2½, and India Stock, 240 2½. Exchequer Bills are 44 40, and India Bonds, 32 24 prem.

In the Foreign Market, Dutch Five per Cent. is at 94½ 85; and the Two and a Half per Cent. 49½; Belgian 95½ 96; Russia 103 to 4; Portuguese 57½; Keyency Bonds 57½; and Spanish 23½. Brazilian Stock is 67½ 68; and Mexican remains without any fluctuation at 37½ 37½, the letters brought by the packet contain no political news of importance.”

LATE AND IMPORTANT FROM SPAIN.—The following intelligence from the Daily Advertiser, furnishes information from Europe more important than any before received for a long while.

The effect throughout Europe of the ascendancy of liberalism in the councils of Spain—if that ascendancy can be maintained and confirmed—can hardly be conjectured.

There are later papers, too, from London, by two days—up to the 20th; and from Liverpool, of the 18th.

Extracts from these follow:

The Editors of the New York Daily Advertiser are indebted to the late Governor Cabrera, now an exile in this city, for the following highly interesting intelligence, received from his respectable correspondents, at Cadiz, under date of 22d January, by the brig Herald, which arrived at Boston on Monday last, having sailed on the 22d, the date of the letters, and which are from the most authentic sources.

The dates from Madrid are to the 17th of January, nine days later than those received by the latest arrival here, viz.: the Francis Depau, from England.

On the 16th January a most daring and deep-rooted conspiracy of the Carlist party was discovered.—The plan was to destroy the Queen Regent, her two daughters, the Infant, Don Francis, his wife, and all his children—in fact, to destroy all the Royal family. Many of the most distinguished persons, of all ranks, had been arrested and thrown into prison.

The Liberals became so indignant at the conduct of the Premier, Zea Bermudez, and his fellow ministers—by whose negligence the conspiracy had been so near being accomplished—that they repaired to the house of Zea Bermudez on the night of the 16th, for the purpose of destroying him; but being unable to find him, they vented their rage by destroying all the furniture and valuables.

The excitement was so great that the Queen Regent changed her government at once, by removing all her Ministers except Zarce Del Valle of the War Department. Martinez de la Rosa is appointed Premier, in the place of Zea Bermudez; Gareli is called to the Department of Justice; Vasquez Figueras, Minister of the Marine; and Aranadale to the Finance Department.

Nearly all the Captains-General of the various Provinces have addressed the most energetic representations to the Queen, requiring a representative government, and demanding the immediate assembling of the Cortes. A new state of things had taken place; the Liberals were again in power; and exiles from foreign countries were returning to the land of their nativity.

ENGLAND.

LONDON, (Thursday Evening, 1-2 past 7.)—The line to be adopted by Great Britain and France in respect to Russia and Turkey being now generally understood as implying no interruption to the general peace, the sensation in that direction is rapidly subsiding. The British and French fleets in the Mediterranean have been ordered—the former to Malta, and the latter to Toulon.

The exportation of horses from this country to Portugal is very extensive, but several hundreds have been detained for some days past at Portsmouth,

either from the want of conveyances, or the unfavorable state of the weather. One dealer alone has forwarded to that place upwards of five hundred horses since the first inst.

FRANCE.

Chamber of Deputies.

JANUARY 13.—The Duke de Broglie, on taking his seat on the Ministers' bench, was congratulated by several Deputies on his recovery from indisposition.

M. Benjamin Delessert read to the Chamber a proposition relative to the establishment of Savings' Banks. The following is the substance:—

1. There shall be established successively in each chief town of every Department, a Savings Bank.

2. The Prefect shall nominate a Commission in each locality, to inspect and control the deposits and repayments.

3. This Commission, the members of which shall give their services gratuitously, shall have for President the Prefect or the Sub-prefect.

4. The Receiver of the Department, or of the Arrondissement, shall undertake the charge of Treasurer.

5. Deposits may be made once a week. No smaller sum than 1*fr.*, and no greater than 300*fr.*, to be received at one time, and from one person; and the deposits belonging to any one individual are never to be allowed to exceed 3000*fr.*

The Minister of Finance presented a project of law, having for its object the execution of the Treaty with the United States of America.

AUSTRIA.

VIENNA, JAN. 5.—All is silent respecting the Eas the French Ambassador has despatched a courier to Paris, probably in consequence of the last accounts from Constantinople, which announced the departure of the English and French squadrons. The tone of the English journals is indeed very warlike, but nobody is deceived by this: for the aversion of the English nation to a war is well known; the funds are rising; the negotiations respecting Belgium seem to be proceeding, and it is hoped that by the serious intervention of the Powers, they will at length be brought to a conclusion. Count Lalain, Belgian Chargé d'Affaires here, is said to have received another appointment. Count Belle Brake, the Danish Secretary of Legation, is going in the same capacity to St. Petersburg.

TURKEY.

CONSTANTINOPLE, DEC. 17.—I refer to my letter of the 11th inst., and inform you that the energetic remonstrances of the Porte have succeeded in obtaining the withdrawal of the French and English squadrons, which had been considerably reinforced. The English and French Ambassadors sent the day before yesterday directions to the Commanders of their respective fleets to return to Malta and Toulon, there to remain until further orders.

The news of the retirement of the combined squadron has produced the best effect; it is now hoped that all existing differences will be shortly adjusted amicably.

ITALY.

The letters from Bologna to Jan. 5, say that several persons of distinction at Modena have come to Bologna, to escape the new persecutions which have lately taken place in the Duchy. Among these persons is the son of Count Coupani, ex-Governor of Modena, M. Garofoli, ex-Chief of the Police, Marquis Campori, and some of the Guard of Honor of the Duke. Some think that a pretended conspiracy is the cause; others that these persecutions are connected with the affair of the unfortunate Ricci, who was condemned to death by a military commission, and shot in July, 1832. The truth is, that the Ministry de buon governo, having caused to be published some further depositions of the accomplices of M. Ricci, several persons look at Modena and Bologna as named in them, and thereby implicated. Those of Modena belong to the Ministerial Departments, the Court and the noble guard. Those at Bologna are of the first distinction; but among them are some who have not political opinions; others who, on account of their age, are exempt from all suspicion; for instance, Prince Buccionchi, son of Elisa Buonaparte, who was killed by a fall from his horse at Rome, on Easter day, last year. This pamphlet, which has been published at Modena, has been received at Bologna, where it is the general subject of conversation. But at Modena on the 29th December, it was made the order of the day to all the corps of volunteers, in order to animate the peasants in favor of the Duke, and to excite their animosity against the persons named in these depositions. Colonel Fabbri, the Commander, made them renew on this occasion the oath of fidelity, and swear again to exterminate the Liberals.

[From the National Intelligencer of Feb. 19.]

OBITUARY.—Died, about meridian, yesterday, in this city, **WILLIAM WIRT**, Esq. aged about 62 years. In him, his family have lost all that can be lost, in one among the most tender, devoted, and enlightened of husbands and fathers.

Of all who witnessed the strong and heart-endearing ties which this event has sundered, there lives not one but must sympathize, from his inmost soul, with the amiable and exemplary wife, who at once imparted and partook the purest and highest enjoyments of conjugal union, and who is now to see a premature grave open to receive the mortal remains of him who was the source and the object of the hallowed affections by which that union was cemented and embellished—with children, to whom the hand is now cold and motionless, which but yesterday led them, with paternal solicitude and unerring aim, through the paths of human science, in all the intricacies of which the exercises of studious youth, and the sustained application of mature years, had instructed him, and which his genius had illustrated; to those children, the eloquent tongue, though not yet mute to grateful memory, no longer speaks, in living accents, precepts of wisdom, morality, and piety, so lately enforced by the example, and adorned by the life and manners of a Christian, a scholar, and a gentleman.

His country, indeed, has lost a citizen whose talent and virtues, always adequate to the highest tasks of public service, were always devoted, with unflinching patriotism, to his country's good: but to that country he has left an inheritance in the extended fame which will perpetuate his name with the enduring monuments of the age and land in which he lived.

His professional brethren must largely participate in all the causes of profound regret, both general and particular, that can effect either communities or individuals. Lamenting him as a brother, whom in life they loved with brotherly affection, and admired as the ornament of their profession; they have lost no time in evincing their alacrity to manifest their respect to his memory; and will, doubtless, follow out the first promptings of a spontaneous and all-pervading sentiment, and give unequivocal and lasting tokens of the sincerity and depths of their affection, their admiration, and their regret.

TRIBUTES OF RESPECT.—At a meeting of the gentlemen of the Bar of the Supreme Court of the United States, and of the Officers of the Court, at the Court Room in the Capitol, on Tuesday, the 18th instant, the Hon. B. F. BUTLER, Attorney General of the United States, was called to the Chair, and the Hon. JOHN SERGEANT was appointed Secretary:—whereupon,

Mr. WESSER rose, and addressed the Chair as follows:

It is announced to us that one of the oldest, one of the ablest, one of the most distinguished, members of this Bar, has departed this mortal life. **WILLIAM WIRT** is no more! He has this day closed a professional career, among the longest and the most brilliant, which the distinguished members of the profession in the United States have at any time accomplished. Unsullied in everything which regards professional honor and integrity, patient of labor, and rich in those stores of learning which are the reward of patient labor, and patient labor only; and if equalled, yet certainly allowed not to be excelled, in fervent, animated, and persuasive eloquence, he has left an example, which those who seek to raise themselves to great heights of professional eminence, will, hereafter, emulously study. Fortunately, indeed, will be the few, who shall imitate it successfully!

As a public man, it is not our peculiar duty to speak of Mr. Wirt here. His character, in that respect belongs to his country, and to the history of his country. And, sir, if we were to speak of him in his private life, and in his social relations, all we could possibly say of his urbanity, his kindness, the faithfulness of his friendships, and the warmth of his affections, would hardly seem sufficiently strong and glowing to do him justice, in the feeling and judgment of those who, separated, now forever, from his embraces, can only enshrine his memory in their bleeding hearts. Nor may we, sir, more than allude to that other relation, which belonged to him, and belongs to us all; that high and paramount relation, which connects man with his Maker! It may be permitted us, however, to have the pleasure of recording his name, as one who felt a deep sense of religious duty, and who placed all his hopes of the future, in the truths and in the doctrines of Christianity.

But our particular ties to him, were the ties of

our profession. He was our brother, and he was our friend. With talents, powerful enough to excite the strength of the strongest, with a kindness both of heart and of manner capable of warming and winning the coldest of his brethren, he has now completed the term of his professional life, and of his earthly existence, in the enjoyment of the high respect and cordial affections of us all. Let us, then, sir, hasten to pay to his memory the well deserved tribute of our regard. Let us lose no time in testifying our sense of our loss, and in expressing our grief, that one great light of our profession is extinguished forever.

Mr. WESSER concluded by submitting the following resolutions, which were read, and unanimously adopted, viz:

Resolved, That the members of this Bar feel, with deep sensibility, the loss which the profession, and the country have sustained, in the death of **WILLIAM WIRT**, a member of this Bar, and heretofore for many years, Attorney General of the United States.

Resolved, That we cherish the highest respect for the professional learning of the deceased, for his varied talent and ability, for the uprightness of his professional life, and for the amiable and excellent qualities which belonged to him as a man.

Resolved, That to testify these sentiments, we will wear the usual badge of mourning for the residue of the term.

Resolved, That a Committee be appointed to offer to his bereaved and afflicted family, the condolence and sympathy of his brethren of the Bar; and to request that he may be interred in the City of Washington, and that his professional brethren be permitted to raise a suitable monument to his memory.

Resolved, That Mr. SOUTHWARD be requested to pronounce a discourse before the Bar, upon the professional character and virtues of Mr. WIRT, at such time, during the present term, as may suit his convenience.

Resolved, That the Attorney General do move the Court that these resolutions be entered on the minutes of their proceedings.

The following gentlemen were appointed by the Chair to compose the Committee ordered by the fourth resolution: Mr. SWANN, Mr. JONES, Mr. WESSER, Mr. CLAY, Mr. SOUTHWARD, Mr. SERGEANT, Mr. PETERS.

[From the Daily Advertiser.]

NEW YORK COLONIZATION SOCIETY.—The first meeting of the New Board of Managers of the Colonization Society was held on Monday, 17th ult. and was very fully attended—President Duer, of Columbia College, in the Chair. Samuel Ward, Esq. having declined the office of Vice President, the Rev. Dr. Bangs was elected in his room.

A committee appointed for the purpose of reporting the draft of an Address to the public on the subject of the affairs of the Parent Society at Washington, and the operations of this Society both present and in prospect, made an interesting report on those subjects, which was read and adopted.

The board determined, with great unanimity, to send a pioneer expedition to Africa, in May, for the purpose of making the necessary arrangements for the immediate foundation of the contemplated colony. For this purpose, Mr. Israel M. Searle, a graduate of Amherst College, was appointed to take charge of the same, under the superintendence of the Rev. Mr. Spalding, who had previously been appointed principal agent of the Society in Africa.

A resolution was likewise adopted for holding a public meeting at the Brick Church in Beekman st. on Tuesday evening next, for the purpose of giving more full and particular information on the subjects contemplated by the enterprise.

The report above-mentioned, after a recapitulation of the difficulties and embarrassments which the Parent Society has experienced from a defective organization, and the consequent indebtedness which they had incurred beyond their income, gives an account of the re-organization of the institution at the annual meeting at Washington in January last, under a much more effective and energetic system, with a statement of the pecuniary resources for the liquidation of their debt, and for the expenses of their future operations. We have not room for the insertion of the report at length, but the following extract from it will be found more immediately interesting to the auxiliary society, and the public, in this city.

"A new and important principle of action is also about to be adopted for the future operations of the Society. The Parent Board will probably hereafter wholly abstain from the superintendence in detail of transporting emigrants to the colony; and leave to such of the auxiliary and local Societies, as choose to undertake it, the labor and expense of collecting emi-

grants, sending them to Africa, and providing for them on their arrival, and until they can sustain themselves.

It appears to be generally expected that the Parent Society will confine itself to, and find sufficient employment in, governing and defending the Colony, enlarging its territory, fostering its civil, religious and literary institutions, and placing them on a broad and permanent basis. It will, however, and no doubt ought, to retain and exercise the power of controlling and regulating the auxiliary and local societies, in their mode of conducting emigration.—It should certainly prevent them from sending improper emigrants, or in too great numbers, or at improper times, or without necessary provision for their comfort and health during the voyage, and for their prosperity and happiness after their arrival in Liberia.

The Parent Society will, however, judge for itself in marking the lines of its future duties, and in that respect be regulated by wise and enlightened councils. But by dividing, in the manner suggested, the labor and responsibility, and securing the active co-operation of a greater number of devoted friends in different parts of the country, and at the same time acknowledging and yielding to the control and direction of a wise and efficient central head to check all extravagant or irregular action, the business of colonization hereafter, we trust, will be conducted with greater care, regularity and economy.

In conformity with this principle of action, the Colonization Society of the city of New York will hereafter itself expend in colonization, the money which shall be raised under its immediate auspices. To enable this Society to do that, the Parent Society has given us permission to establish a new settlement, to be called New York, at some suitable location in Liberia—and to direct all our energies and expend our resources upon that object.

In prosecuting it, we shall not endeavor to see how many free persons of color we can, by our own efforts, send to Africa; nor how many slaves we can emancipate. But our great aim will be, to promote, by all the means in our power, the true interests of those who may emigrate to our settlement, and the true interests of the Pagan population among whom they settle.

To this end our colony will be founded on the following principles:

1st. The selection of such Emigrants only as are Members of the Temperance Society, and of unexceptionable moral character.

2d. The settlement of them under such circumstances as will promote Agriculture, especially the cultivation of the staples of the African soil, such as rice, cotton, sugar, and coffee.

3d. The adoption of a system of universal education, and to provide at once the means of instruction in letters and the useful arts of life, not only for the colonists, but also for the native Africans who may live in the settlement and its vicinity.

4th. The entire prohibition of the use, and traffic in ardent spirits—except for medicinal purposes.

In view of the facts and objects above presented, the Colonization Society of the city of New York have adopted the necessary measures, to secure an efficient Board of Managers, and responsible and active officers and agents to conduct its future business and operations. The Society has resolved to establish a colony, and has already an exploring agent employed in Africa, to examine Cape Mount, the site of the contemplated colony—and if it shall be found an eligible position, to make the necessary arrangements for the reception of the pioneer emigrants. If the Society should be disappointed in the eligibility of this site, another one will be sought, and the like arrangements made. The Society, therefore, earnestly and respectfully invite the co-operation and support of their fellow citizens, in executing this interesting and benevolent enterprise. They pledge themselves that all money and property, contributed to this object, shall be faithfully and economically applied.

WM. A. DUER, President.
IRA B. UNDERHILL, Rec. Secretary.
New York, Feb. 17th, 1834."

The Rev's Dr. Channing and Gannet, were lately summoned before the Grand Jury of Boston, to give testimony respecting a duel, but refused to disclose what they knew of the matter. The Grand Jury immediately made a representation to the Judge of the Municipal Court, who summoned those gentlemen before him, and they appeared. The result is given in the Boston Atlas.

The Commonwealth's Attorney stated to the Court the reason why these gentlemen had been summoned

and that the Grand Jury were now in Court, waiting for the decision of the Court, whether these gentlemen should be compelled to testify. He cited a passage from Starkie on evidence to show that by the common law, not even auricular confessions to Catholic priests were privileged from being testified to; that it appeared by the notes to Metcalf's edition of Starkie, that in many of the United States, confessions made to Protestant clergymen were not privileged, and that the Supreme Court in this State had settled the same principle in Commonwealth versus Drake, 15 Mass. Reported, page 161.

The Judge stated that clergymen were not exempted by the law from testifying when called before a Court or Grand Jury as to communications made to them as clergymen; "that the privilege of secrecy is strictly confined to persons acting as counsel, attorney, or solicitors, in causes, and cannot be extended to those confidentially employed in other professions; that this is a privilege secured by law to the client rather than the counsellor. He referred to the case of the Duchess of Kingston, as cited by McNally on Evidence.

Dr. Channing stated to the Court that he had thought the communications made by a parishioner to his spiritual guide were sacred, and should not be disclosed, but in relation to the present case, he was suddenly called before the Grand Jury, and had little or no opportunity for reflection upon the subject; that since yesterday he had reflected upon the circumstances, and he now considered that any communications made to him in this case, were communicated to him rather as an esteemed friend, than to a spiritual guide; he was therefore now ready to testify.

Mr. Gannett stated that he viewed the communications made to him, as made in his character as a spiritual guide, and whilst he wished all artificial distinctions in favor of the clergy might be abolished, he hoped the Court would excuse him from testifying. He then read his reasons for declining to testify in such a case.

The Judge said that he certainly respected the delicacy exhibited by the gentleman, but that he must remember that the law, as such, has no mercy, and knows no distinction of persons; that in his opinion, he was bound, as a good citizen, to testify.

Mr. G. said, feeling bound as a citizen, he would testify, although he regretted the law was such as to compel him.

BANK FUND—Pursuant to a resolution of the Senate, the Comptroller reported on Tuesday, the amount and condition of the Bank Fund, from which we have prepared the following statement:

Contribution in 1830,	\$26,983 67
" 1831,	62,627 62
" 1832,	94,295 60
" 1833,	105,139 54

Total, \$289,046 43

The investments of the fund are as follows:	
Canal debt, bearing an int. of 5 per ct.	\$8,082 40
Astor " " 5 "	92,000 00
General fund, " 4 1-4 "	178,026 01

\$278,108 41

There is due from the revenue to the capital, the sum of \$10,938 02, which, with the sum invested, constitutes the whole amount of the fund. The amount of revenue due to the capital, must, by the provisions of the act creating the fund, be paid before any part can be paid to the corporations. The revenue for the current year will amount to \$11,235 34—[Argus.]

New Post Office.—A new Post Office has been established in the town of Scaghticoke, Rensselaer Co., N. Y., called *Old Scaghticoke*, and Aaron A. Marcellus appointed Post Master.

[From the Pittsburgh Gazette of Feb. 19.]

Flour was sold in this city, yesterday, at \$2 62 1-2. Can persons, who declare that there is no pressure in the money market, account for this reduction in price?

[From the Mercantile Advertiser.]

About 100 tons of ice carried from Boston to Calcutta, by the Tuscan, had been landed free of duty, and orders given to extend the same favor to similar cargoes from whatever quarter. It was selling at 6 1-4 cents per pound.

Supposing the whole 100 tons to sell at the above rate, it would produce *twelve thousand five hundred dollars*, upon an investment, probably, including the cost of all the extra precautions for preserving the ice, of \$500.

AN INTERESTING AND USEFUL MAP.

A friend of ours has now in a state of forwardness, a Map upon which will be delineated nearly all the Railroads now chartered in the U. States. It is designed to show the present contemplated connexion of the different lines, as well as where others may hereafter be constructed to connect with them. It will be completed in a few weeks, and may be had either in sheets, or put up in morocco for pocket maps, in any quantity, by applying to the subscriber.

D. K. MINOR, 35 Wall street.
New-York, August 14, 1833.

INCOMBUSTIBLE ARCHITECTURE.

INCOMBUSTIBLE dwelling-houses and buildings of all kinds devised or built in New-York, or any part of the United States, as cheap as any other combustible buildings. Actual buildings and houses rendered incombustible at a small additional expense.

SHIPS of all sorts, and Steamboats, rendered incombustible, and not liable to sink, at a small expense.

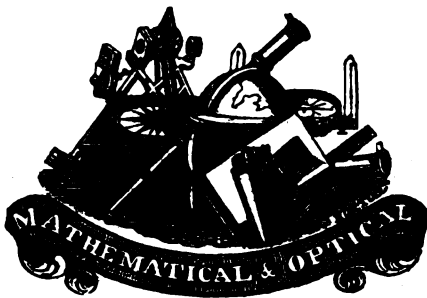
For sale, 10,000 lbs. of ANTONIS, or Incombustible Varnish, at one dollar per lb.

Apply to C. S. RAFINESQUE, Professor of Hist. and Nat. Sciences, Chemist, Architect, &c. in Philadelphia, No. 59 North 8th street. A pamphlet given gratis.

References in New-York.—Mr. Minor, Editor of the Mechanics' Magazine; Messrs. Rushton & Aspinwall, Druggists.

Editors in the city or country, copying this advertisement, will receive a commission on any contract procured by their means.

81 R J M & F



INSTRUMENTS.

SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

EWING & HEARTY, at the sign of the Quadrant, No. 63 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude.

For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewing & Hartly.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable. They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES F. STABLER,

Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' Instruments of your Manufacture, particularly Spirit levels, and Surveyors' Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These Instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

WILLIAM HOWARD, U. S. Civil Engineer.

Baltimore, May 1st, 1833

To Messrs Ewing and Hartly.—As you have asked me to give my opinion of the merits of those Instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming acquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprise so well merits, I remain, yours, &c.

B. H. LATROBE,

Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them upon application, to any persons desirous of perusing the same.

TO RAILROAD COMPANIES.

PROFESSOR RAFINESQUE, of Philadelphia, will undertake to build CARS that will carry along their own railway, and may be used on level M^d Adam roads. They will save ten millions of money to be wasted on 1000 miles of iron railroads to be laid in the United States within a few years, and dispense with tracks and double tracks. These Cars may be drawn by horses or steam. He claims to have discovered them ever since 1823, by his savings filed in the Patent Office. Apply, post paid. 81 R J M & F.

TOWNSEND & DUFFEE, of Palmyra, Manufacturers of Railroad Rope, having removed their establishment to Hudson, under the name of Duffee, May & Co. offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J. B. Jarvis, Esq. M. & H. R. Co., Albany; or James Archibald, Engineer Hudson and Delaware Canal and Railroad Company, Carbondale, Luzerne county, Pennsylvania.

Hudson, Columbia county, New-York, January 29, 1833.

ALBANY SEED STORE AND HORTICULTURAL REPOSITORY.

The subscriber having resumed the charge of the above establishment, is now enabled to furnish traders and others with FRESH GARDEN SEEDS, upon very favorable terms, and of the growth of 1833, warranted of the best quality.

The greatest care and attention has been bestowed upon the growing and saving of Seeds, and none will be sold at this establishment excepting those raised expressly for it, and by experienced seedsmen; and those kinds imported which cannot be raised to perfection in this country; these are from the best houses in Europe, and may be relied upon as genuine.

It is earnestly requested whenever there are any failures hereafter, they should be represented to the subscriber; not that it is possible to obviate unfavorable seasons and circumstances, but that satisfaction may be rendered and perfection approximated.

Also—French Lucern, White Dutch Clover, White Mulberry Seed, genuine Mangel Wutzell, Yellow Locust, Ruta Baga, and Field Turnip Seeds, well worth the attention of Farmers.

W. THORNBURN,

347 N. Market st. (opposite Post Office.)

Catalogues may be had at the Store; if sent for by mail, will be forwarded gratis. Orders solicited early, as the better justice can be done in the execution.

* Mr. Thornburn is also Agent for the following publications, to wit:—

NEW YORK FARMER and American Gardeners' Magazine. MECHANICS' MAGAZINE and Register of Inventions & Improvements.

AMERICAN RAILROAD JOURNAL and Advocate of Internal Improvements; and the

NEW-YORK AMERICAN, Daily, Tri-Weekly, and Semi-Weekly; either or all of which may be seen and obtained by those who wish them, by calling at 347 North Market street, Albany.

SURVEYORS' INSTRUMENTS.

Compasses of various sizes and of superior quality, warranted.

Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by E. & G. W. BLUNT, 154 Water street, corner of Maidenlane.

ENGINEERING AND SURVEYING INSTRUMENTS.

The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principle of construction and workmanship to any imported or manufactured in the United States; several of which are entirely new: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy; also, a Railroad Goniometer with two Telescopes—and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.

WM. J. YOUNG,

Mathematical Instrument Maker, No. 9 Dock street, Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.

Baltimore, 1833.

In reply to thy inquiries respecting the Instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad. I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all Instruments of the kind are liable.

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sights, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to lateral angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying off railroads—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,

JAMES F. STABLER, Superintendent of Construction of Baltimore and Ohio Railroad.

Philadelphia, February, 1833.

Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind now in use, and as such most cheerfully recommend it to Engineers and Surveyors.

E. H. OGDEN, Civil Engineer.

Germantown, February, 1833.

For a year past I have used Instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these Instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY R. CAMPBELL, Eng. Philad.

Germant, and Norrist. Railroad

ml by

The North River is now open; and the steamboats Constitution and Constellation run daily.

We have by the boat that came down last night, the Albany papers of yesterday morning.

APPOINTMENTS BY THE PRESIDENT.

By and with the advice and consent of the Senate.
H. T. Williams to be Surveyor General of Public Lands in the State of Louisiana, in the place of H. B. Trist, resigned.

James Corcoran to be Consul for Londonderry, in Ireland.

William J. Dubbs to be Consul for Maracaibo, in the Republic of Colombia in the place of Alfred Laussat resigned.

William A. Magill to be Consul for the Island of Martinique, in the place of John S. Miereken, deceased.

Alexander Schwartz to be Consul for Riga, in Russia.

Charles J. Smith to be Consul of the United States at Para, in Brazil, in the place of Abraham R. Smith, resigned.

FOREIGN VARIETIES.

The Seine, at Paris on Tuesday, 31st Dec., rose nearly to the height of the great flood in 1740, filling the cellars, sweeping goods off the wharves, and creating much alarm in its vicinity.

Mr. Lander reached Liverpool on Wednesday, 1st January, in the Columbine, from Fernando Po. He is in excellent health, after his perilous expedition into the interior of Africa.

Cashmere Shawl Manufacture.—It is computed that there are now not less than 50,000 artisans engaged throughout Scotland in the manufacture of shawls from the Cashmere or Thibet goat. The yarn for the purpose is obtained from France.

American Forest Trees.—Public attention seems to be turning, by those who desire ornamented plantations, to the great variety and beauty of our forest trees; and particularly the oaks. "To these," says a writer on this subject, "who vindicate the practice of exclusively planting native trees, as most suitable to the country, it is answered, that they might as well refuse to grow pine apples, because they do not spring up wild in our woods, as reject the brilliant tints of the American forest trees, because nature has clothed ours in a more sombre tinge."—Above 40 specimens of American oaks are now constantly planted for sale, in the nurseries about London. We were not aware that the *Live Oak* would stand the climate of England, but mention is made of several in different parts of the kingdom, and of one particularly, a large one, in Lord Pembroke's Park at Wilton.

Sir John Herschel.—This distinguished astronomer and true philosopher, has sailed for the Cape of Good Hope—there to observe the starry wenders of the Southern sky. "To the sincere and enlightened philanthropist, it may afford," it is finely argued, "matter for proud and consoling reflection, to consider this philosopher, this emissary from European civilization, tranquilly seated in Africa at the farther extremity of that barbarous and inhospitable continent—and nightly, in what was a howling desert, only tenanted by the tiger and the hyena, or the wandering savage, scarcely more humanized—pursuing undisturbed his high vocations."

John Galt.—This well-known writer, whose precarious health for some time past, had little justified any hope of ultimate recovery, seems quite restored; and has appeared in two recent works—one in three volumes, prose, consisting of various tales, under the title of "Stories of the Study," and another of "Poems."

The Marquis of Sligo.—This nobleman who is appointed Governor of the island of Jamaica, was some 20 years ago tried before Sir Wm. Scott for inveigling British seamen from King's ships, to man his yacht in the Mediterranean. He was found guilty, and sentenced to several months' imprisonment in Newgate, which he underwent. His mother, then a widow, went into Court to intercede for her son. The stern and upright Judge was inac-

cessible; but the man was touched by the scene and by the conduct of the mother; and she soon after became the wife of Sir Wm. Scott.

* * At the commencement of the last year I offered to send the American *tri-weekly* instead of *semi-weekly*, together with two of my periodicals, in exchange to those who would publish my advertisements of the different periodicals. In consequence of this notice, the exchange list was increased to 165. I soon found that the expense would be greater than I had anticipated, yet I had made the offer, and would of course continue it through the year—as I have done. I however find it *too expensive* to continue to send as heretofore. The circulation of my PERIODICALS, (upon which the expense falls,) will not warrant it, and I must, therefore, notwithstanding the uniform kindness with which they have been treated by those to whom they have been sent, materially reduce their exchange list.

The *semi-weekly* American will hereafter be sent in exchange to those who will publish the following advertisements a few weeks for the difference of price. *New-York, January 20, 1834.*

VOL. III. OF THE RAILROAD JOURNAL AND ADVOCATE OF INTERNAL IMPROVEMENTS is published once a week in quarto form, with 16 pages to each number, at \$3; or in *semi-monthly* form, of 32 pages, stitched in a cover of colored paper, at \$4 per annum, in advance. The first and second volumes of the Journal may be had in two parts to the year, either stitched in covers or bound in boards, at the subscription price, with price of binding, in one part, 50 cents, in two parts \$1 per volume. Those in covers may be sent by mail to any part of the country, the same as a magazine. Published at No. 35 Wall st., New-York, by D. K. MINOR, Editor and Proprietor.

THE MECHANICS' MAGAZINE AND REGISTER OF INVENTIONS AND IMPROVEMENTS is now just commencing its second year. It will be continued in a manner altogether superior to that of the first year. It has drawn forth many valuable correspondents, in different parts of the country, with the assistance of whom, and those who may hereafter contribute to its columns, together with the ability of Mr. JOHN KNIGHT, formerly, and for several years, proprietor and publisher of the LONDON MECHANICS' MAGAZINE, who is engaged as Editor, the proprietor has no hesitation in saying that it will be found worthy of an extended circulation and a liberal support. The first year, or two first volumes, having been stereotyped, may now be had either in numbers, or bound in boards—either at wholesale or retail. Price \$1 50 per vol. in numbers, or \$1 75 in boards, or \$3 per annum. A liberal discount made to the trade. Published by the proprietor, D. K. MINOR, at No. 35 Wall st. N. Y.

THE NEW-YORK FARMER AND AMERICAN GARDENER'S MAGAZINE, has commenced the second volume of a new series. It is published once a month, in quarto form of 32 pages to each monthly number, at \$3 per annum in advance. The last volume may be had either stitched in a cover, so as to be sent by mail, or in boards. Price, stitched, \$3 25; in boards, \$3 50. Each subscriber who pays in advance, or previous to the first of April, free of postage or commission, will be entitled to eight additional pages to each monthly number, or 96 extra pages to the volume. Published at No. 35 Wall street, N. Y.: D. K. MINOR, Proprietor. Jan. 22, 1834.

A QUARTERLY JOURNAL OF AGRICULTURE AND MECHANICS will hereafter be published at the same office. Each quarterly number will contain about 300 large octavo pages, embracing the most choice articles from the best agricultural and mechanical publications both in America and Europe. It will form 2 volumes to the year, of about 640 pages each, and will be put up like other quarterly publications, so as to be sent by mail. Price, \$5 per annum, in advance.

N. B. A small edition only will be published.

D. K. Minor also publishes the NEW-YORK AMERICAN, daily, tri-weekly, and semi-weekly.

Also, the PLOUGH-BOY, a cheap agricultural publication, of eight quarto pages, is issued once a week, at \$1 50 per annum, in advance. It contains much interesting reading upon agriculture, &c.

All Letters and Communications for the above publications, may be addressed, free of postage, to D. K. MINOR.

A scientific person versed in Mechanics, Chemistry and Mineralogy, of several years practical experience in different branches of Civil Engineering, and who is also a good draughtsman, is desirous of obtaining employment either as an instructor in some public institution, or as an Engineer upon some private or public work.

He was educated at one of the first scientific institutions in the United States, and was for several years an instructor in the said institution.

A line addressed to B. at Railroad Journal Office, No. 35 Wall street, will meet with immediate attention. J 15 if

NOVELTY WORKS,

Near Dry Dock, New-York.

THOMAS B. STILLMAN, Manufacturer of Steam Engines, Boilers, Railroad and Mill Work, Lathes, Presses, and other Machinery. Also, Dr. Nott's Patent Tubular Boilers, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited. mls

STEPHENSON,

Builder of a superior style of Passenger Cars for Railroads No. 264 Elizabeth street, near Bleecker street, New-York.

RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part of the New-York and Harlem Railroad, now in operation. J 25 if

RAILROAD CAR WHEELS, BOXES AND

AND OTHER RAILROAD CASTINGS.

Also, AXLES furnished and fitted to wheels complete at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to. Also, CAR SPRINGS.

Also, Flange Tires turned complete.

J8 ROGERS, KETCHUM & GROSVENOR.

LOCOMOTIVE ENGINES.

THE AMERICAN STEAM CARRIAGE COMPANY, OF PHILADELPHIA, respectfully inform the public, and especially Railroad and Transportation Companies, that they have become sole proprietors of certain improvements in the construction of Locomotive Engines, and other railway carriages, secured to Col. Stephen H. Long, of the United States Engineers, by letters patent from the United States, and that they are prepared to execute any orders for the construction of Locomotive Engines, Tenders, &c. with which they may be favored, and pledge themselves to a punctual compliance with any engagements they may make in reference to this line of business.

They have already in their possession the requisite apparatus for the construction of three classes of engines, viz. engines weighing four, five, and six tons.

The engines made by them will be warranted to travel at the following rates of speed, viz. a six ton engine at a speed of 15 miles per hour; a five ton engine at a speed of 18 miles per hour; a four ton engine at a speed of 23 1/2 miles per hour. Their performance in other respects will be warranted to equal that of the best English engines of the same class, with respect not only to their efficiency in the conveyance of burdens, but to their durability, and the cheapness and facility of their repairs.

The engines will be adapted to the use of anthracite coal, pine wood, coke, or any other fuel hitherto used in locomotive engines.

The terms shall be quite as favorable, and even more moderate, than those on which engines of the same class can be procured from abroad.

All orders for engines, &c. and other communications in reference to the subject, will be addressed to the subscriber, in the city of Philadelphia, and shall receive prompt attention.

By order of the Company, WILLIAM NORRIS, Secretary.

December 2d, 1833.

For further information on this subject see No. 49, page 772 of this Journal. ds

TO STEAMBOAT COMPANIES.

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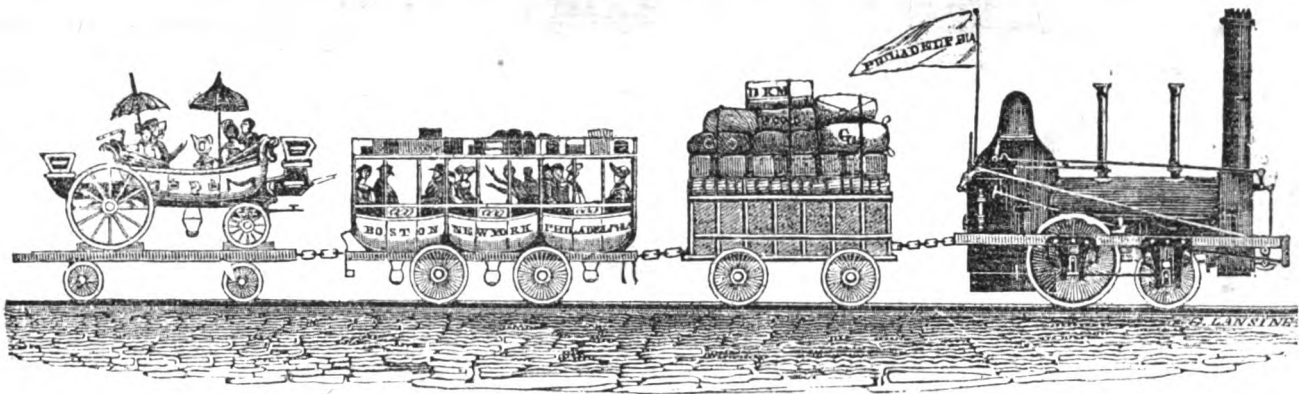
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AMERICAN RAILROAD JOURNAL, AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT No. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, Editor.]

SATURDAY, MARCH 8, 1834.

[VOLUME III.—No. 9.

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, MARCH 8, 1834.

The Editor of the Railroad Journal regrets that circumstances render it necessary for him to take leave of those who have encouraged him in his course by *subscribing* to the Journal, but have *discouraged* him from its continuance by omitting to pay for it. If it is *worth* reading, it is certainly worth \$3 a year—at least it costs him so near that amount, that he cannot afford to print many more than are promptly paid for, and therefore it will be discontinued after *this* number, where the *subscription for last year is still unpaid*. To those who have paid for the previous, but are in arrear for the current year, the editor will merely observe, that to them, or to him, *three dollars* alone is of little consequence; but when they consider that *his business* is entirely made up of such sums, and that there are many hundred such amounts yet due for the Journal, he trusts that each one will remit his subscription without delay; and do it also in a *U. S. Bank note*, if possible, as all others, except a few in this city and immediate vicinity, are at a *heavy discount*. Any subscriber, remitting a \$5 U. S. note, for the *current* [and ensuing year, may do so without paying postage, and he will have credit for its full amount.

Those who have paid in advance for the current year, he begs leave to tender his thanks for having thus expressed their approbation of the utility of such a work, and trusts that they may derive ample remuneration from its columns for their liberality.

Having determined to send *only* to those who deem it worth paying for in advance, yet

being unwilling to be deemed uncourteous to those who may not have had leisure or opportunity to attend to so small a matter, the Journal will be sent to all, as at present, *until the 1st of April*, that every subscriber may have ample time to remit. After that date it will not be sent, unless the subscription shall have been paid.

From the Montreal Gazette we extract the following :

Norman Bethune, Esq. of this city has obtained letters patent for a new improved principle for building steam-vessels. Of course we are unaware of the exact nature of Mr. Bethune's improvement, but he has stated to us that ever since the completion of the Manchester and Liverpool railroad, his mind had occasionally been engaged in devising some improvement in the speed of steam-vessels, but that owing to his avocations he had not leisure to give much attention to the subject. He had thought of the buoyancy of the cask, but did not discover the application of it until he read a description of Mr. Burden's new boat, which seemed to promise what he had been in search of. But upon carefully examining it, he discovered a great deficiency in safety to the passengers and cargo, in the event of an accident happening to one of the tubes, by striking a piece of floating timber or ice, end on, while under full impetus, which would cause that side to fill almost instantaneously, and the weight on deck would sink it in a few minutes to the bottom; but where the depth of water should be greater than the breadth of her deck, she would fall over on her back. To obviate such a risk has for the last four months been his study, and he has, in his opinion, happily arrived at a complete safeguard against such an accident; and in attaining that desirable end, his boat naturally acquires greater buoyancy, and of course greater speed. Mr. Bethune feels perfectly satisfied that a vessel built on his plan will make the passage to Quebec in eight hours, and return in ten, stoppages included. Should his views prove correct, two boats, built upon the new plan, would form a daily line, and starting at six o'clock in the morning from both places, the Montreal boat would land her passengers at Quebec at two o'clock, and the Quebec boat hers at Montreal at four o'clock in the afternoon, (taking the tide as it might happen to be,) and always in day-light.

Navigation of Lake Ontario.—The first vessel which plied the present season between York and Niagara, left the former port on the 20th of February—much earlier than in former years.

On Undulating Railways. By A CIVIL ENGINEER. [For the American Railroad Journal.]

SIR,—Soon after the perusal of the experiments made by Mr. Badnall on the Liverpool and Manchester Railroad, I drew up the following strictures upon them, which I send for publication, if you should think that they will contribute to the objects of your Journal.

A CIVIL ENGINEER.

MR. EDITOR,—You must pardon me—my patience is exhausted—I can no longer silently look on and see your respectable and useful paper countenancing an absurdity which nothing but the blindest species of intuition (that of an inventor for his favorite project) can support after a moment's serious reflection, aided by a knowledge of the laws of nature. But I must pause—perhaps you have thought, from my abrupt beginning, that I was about to attack another Cataline: you are mistaken—I allude to Mr. Badnall's "undulating railway," and *especially to his late experiments on the Liverpool road*, which, it would seem, were seriously witnessed by Mr. Stephenson, the Engineer of that great work.

After reciting the experiments, the conclusions drawn from them are,—“That a locomotive engine can not only convey, on an undulating way, double the load which it is capable of conveying at the same velocity on a level line, but that it can accomplish this by the employment of half its power.” [See page 789, last vol.]

That Mr. Badnall should persuade himself of the truth of this most unphilosophical conclusion, is not a matter of much wonder; but that Mr. Stephenson, who is an eminent engineer, a man on whom the epithet 'great' has, on some occasions, been conferred, should sanction it, is to me a cause no less of surprise than regret.

I have declared his conclusions erroneous; it remains to sustain my position. With this view the following observations are premised:

It is a law of gravitation, that, if a body fall freely from a certain height to the earth, its velocity is *accelerated* at each instant of time during its fall: that, *ceteris paribus*, if the same body be projected upwards with the final velocity it had acquired by its fall, it will rise to the same height from which it fell, and in the same time, before its momentum will be destroyed by the same force which generated it, in its downward course.

Bodies moving on inclined planes follow the same general immutable law,—i. e., if a body be projected up an inclination with a certain initial velocity, it will advance up the plane until its momentum is exhausted by its gravi-

tating tendency, when, if left free, it will return down the plane in a time equal to that consumed in its ascent, and at the end of its course will have acquired precisely the initial velocity of projection.

We hence perceive that no more power or momentum can be generated by a body in falling down a plane than will carry it up an equal inclination in length and degree.

These preliminaries made, we may remark that the first six experiments are of one class. We will abridge the 1st, 2d, and 7th, 8th experiments, which contain the substance of the whole set.

1st. "Two engines brought the train to a given point at the foot of the Sutton inclined plane, at which point they had attained a velocity of 19 miles per hour. One engine then left the train, and the other ascended with the load 575 yards in 116 seconds."

2d. "The power of the engine being reversed, the engine and load descended 575 yards in 84 seconds; the velocity attained at the foot of the plane being far greater than at the same point when ascending."

7th. "The two engines attained a velocity of 18 miles per hour at the foot of the ascent; one engine then left the train, and the other shut off her steam, when the whole train rose, by momentum only, 332 yards in 70 seconds."

8th. "The train descended (the engine working) 332 yards in 66 seconds."

In the first set of experiments there is an apparent inconsistency with the law of dynamics above given: that this is only specious, and not real, as Mr. B.'s fancy has led him to imagine, the latter set clearly prove, as I shall endeavor to show in what follows:

The rules of philosophizing seem to have been wholly lost sight of; for, instead of the inference the sanguine Mr. B. draws from 7 and 8, viz., that it can convey double the load, with half its power, they prove the fallacy of the preceding—at least, of the inference Mr. B. draws from them; and show a remarkable coincidence with the laws above laid down. In short, these experiments, coinciding as they do with the known laws of falling bodies, ought to have suggested that, there not being a coincidence among all, there existed some defect, mismanagement, or other adequate cause, for the apparent disagreement of the first set with known laws: instead, these laws we find virtually pronounced incorrect; because, certainly not that his experiments actually prove them so—for any man reasoning *a priori*, from these laws, would have arrived at results similar to those which the experiments develop—but because, forsooth, it would seem they are strange (to him), and perhaps because they would not otherwise account for the preconceived principle of the undulating railway!

The poet may dwell upon the beauties of the visible world, and exclaim with rapture peculiarly his own,

"The distance lends enchantment to the view."

Not so the philosopher. At the distance of 3000 miles he may throw his intellectual ken across the Atlantic, and pierce the dark atmosphere of an inventor's prejudices in the pursuit of truth. Should the inferences drawn from these experiments (the facts are not contested) be true, there would indeed be a revolution, not only in railroads, but in the planetary roads; and possibly render it necessary to remodel those laws which have so long and so well answered the purpose of guiding the planets in their courses!—laws which, we are fain to believe, most of the world would be unwilling to dispense with, even for the bonus Mr. B.'s undulating railway system can confer upon them.

We think that the first of these philosopher's stones, of which Mr. B. claims to be the happy discoverer, will be reduced to its original brass, by the consideration that the train was projected up the plane by the momentum generated by two engines, and was assisted in its further progress by one. The power then is not as Mr.

B.'s fancy has led him to imagine,—"that of one engine doing the work of two on a level,"—but of one engine aided by the momentum generated by two engines before reaching the starting point—a power as efficient and active, while it lasts, as that of the engine actually hitched to the train—a power which a form of words cannot annihilate. Had the train advanced to the starting point aided solely by the engine which was to accompany up the plane, we ask, what would have been the result? Why, plainly, the same as in the last set—equal times—equal velocities.

Unless then we can suppose that Mr. B. has discovered some method of condensing large quantities of momentum, which he may carry in his pocket, and infuse into his train before encountering one of the "bumps" of his "undulating railway system," our humble opinion is, that he will have to amend his first inference by striking out "double the load," and inserting "two-thirds, or one-half of the load," which it is capable of conveying at the same velocity on a level line: which opinion we expect to turn into an indisputable truth in the sequel of this paper.

Again, searching for the cause of the wonder which words have had the power to confer on these experiments—for the reason why, in falling down the plane, the train passes the foot at a far greater velocity than at the same point when ascending,—it should be borne in mind that, if the train had proceeded up the plane aided solely by the momentum generated before reaching it, the mass would have advanced until its momentum was exhausted, when, returning, it would have passed the foot of the plane in a time equal to that of its ascent, and at the same speed; adventitious circumstances, such as irregularities of motion, and consequently of friction upon the rails and otherwheres, as well as from the friction of the pistons of the engine, not being taken into account. The rationale of this discrepancy is readily given.

In addition to the momentum generated by the two engines, the train was assisted by one up the plane: this would operate to carry the train much farther up the plane than if left to its momentum alone; consequently, even if at the turning point this engine had been detached, the gravitating tendency would have caused the train to re-pass the foot at a far greater speed than it ascended with—since there was a much longer space in which to generate its velocity by the accelerating force. Partly from the same cause, and partly for the reason, that, after the momentum ceased to operate in propelling the load, it must have passed over the remaining distance to the turning point at a very slow rate, the time elapsing in the descent must have been much less than that expended in the ascent—offering, surely, nothing strange or unlooked for, one would suppose, by the experimenter; at least, I can vouch for it, by one who was not alchemizing for the "principle of the undulating railway." The experiment was actually more favorable to produce this disparity, since the engine worked down the plane, which would tend still farther to increase the difference of the times.

I am therefore quite at a loss to perceive the justice of inferring thence, that because, under these circumstances, the train descends more rapidly, and in a less time, over a given distance, "that one engine does the work of two on a level." The only inference warranted by the premises is, that trains, under like circumstances, will always descend more rapidly and in less time than they will advance up a given inclination. It is only by a computation of the performance of the engines in the experiment, and a comparison with the actual performance on a level; that we can pronounce upon their relative performance or advantage.

The last experiments, 7 and 8, show clearly a coincidence between the time of ascent and descent, when the train is influenced by momentum only in propelling up the plane, since

the times, as noted; do not sensibly vary from equality—aside from the working of the engine down the plane, they would have come quite up to equality.

From this experiment he could only rationally infer, that the times of ascent and descent of planes under these circumstances is nearly a ratio of equality: and not that, "on the undulating plan, one engine can accomplish double the work with half its power," since the relative performance can only be ascertained by a comparison of the computed absolute performances on the plane and on the level. These computations I shall presently submit.

In short, the inferences Mr. B. draws from the experiments are about as much warranted by the premises as one would be in estimating the value of a quantity of vegetables from the known value of a pound of cheese.

We have seen that the fact of the descent being performed in less time than the ascent in these experiments, under these circumstances, is nothing strange, nothing new, and is consistent with the laws of dynamics; that the last experiment is a direct and plain corroboration of these laws; that the inferences drawn from both sets are incorrect; that, consequently, any superstructure which may be erected upon them is—un chateau en Espagne.

These facts will appear more striking when I shall have answered the question—"What practical result may then be inferred from them?"

Submitting the performance of the first to calculation, we shall find that the rate exceeds but little 12 miles per hour; but if the engines had been permitted to continue their course on the level, it would have been 19 miles per hour. We infer, then, that if a train of cars of the weight, and under the circumstances, of those in the experiment, be brought to the foot of a plane similar to the Sutton plane—if then one engine be detached, while the remainder proceeds up the plane until the gravity of the whole exhausts both the momentum generated by the two engines and the power of the accompanying engine—and at this point the power of the engine be reversed, and the whole return down the plane—that there will always be a loss by the use of this method compared with that of the two engines working on a level road in the ratio of 2 : 3, or one-third.

If we submit the performance of the two last to calculation, we shall find a result below 10 miles per hour for the actual performance. The performance on the level would have been 18 miles per hour. We infer then that there is a loss in the use of the principle of "the undulating railway," under the circumstances of the experiments 7 and 8, in the ratio 10 to 18, or one-half.

As to curvature—shade of Newton!—that matter may be moved in a curved track at a greater velocity and with less power than in a straight line! is to say that bodies moving in curved paths do not always require an increase of power to propel them in the direct ratio of the squares of the velocities, and in the inverse ratio of the radius of curvature!—is to say that the more the curvature is sharpened, the greater the facility with which a body moves therein! (what a rapid flig htw might make to the moon by a road curving like a succession of S's!)—is to say, that when a single force is resolved into its components, that a part is greater than the whole!!

Did the English Smeatons and Rennies, and the French Pronys, seriously approve of all this? or did they smile and shake their heads?

Albany, December 19, 1833.

Further Experiments on the Liverpool and Manchester Railway, to determine the correctness of the Undulating Railway System. [From the London Mechanics' Magazine.]

Sir,—I have this morning (29th October) received your numbers of the 19th and 26th inst. My principal object in now addressing you is to make an observation or two, which Mr. Cheverton's last communication immedi-

ately demands. In the course of a few days I shall trouble you with more general remarks in answer to "S. Y.'s" objections, to which the contents of your next number may possibly enable me to add something in further reply to Mr. Cheverton.

Mr. Cheverton says, in allusion to the comparative amount of resistance on the two lines, "Mr. Badnall will not undertake the task (of showing how trivial is the difference), because it will disclose the poverty of his scheme." In the same breath, also, he observes, that "space will not allow him (Mr. Cheverton,) to show how trivial one is in comparison to the other."

Thus Mr. Cheverton, in a most unwarrantable manner, accuses me of withholding the truth when I have the power of publishing it, which truth, if exposed, would (he says) prove the poverty of my scheme; and yet, after nearly a *twelvemonth's* discussion, he, for want of space, declines to touch upon this subject. I appeal to all your readers, is this generous?

But Mr. Cheverton endeavors to sweeten this bitter observation, by saying, "I cannot believe that there is any intention to deceive, yet it suits his (Mr. Badnall's) purpose better, (though it is not dealing fairly with the public,) to take a very short distance, such as 147 yards," &c. &c.

There is no intention of deceiving, and yet I am not dealing fairly with the public!! I trust Mr. Cheverton will have the good feeling to revoke these expressions, or, at least, to explain them; and if not, I trust he will exclude Mr. R. Stephenson, Mr. Dagleish, Mr. Dixon, and the other engineers under whose joint inspection and superintendence most of the experiments were made, from any participation in a wish to deal unfairly with the public.

I am not one, Mr. Editor, who feels disposed to quibble about trifles, or, in discussions of this kind, to be disturbed by every burst of anger from an opponent whom, in this instance, I feel within my grasp; but I offer my unqualified protest against the right or propriety of any man attributing unjust motives to another, without a cause which he is able to substantiate.

Mr. Cheverton's remarks about inertia and gravity are becoming as familiar to me as my "*hic, hæc, hoc.*"

His simile of "the two boys with a swing," would, I should have imagined, (as some time ago alluded to by your correspondent "Saxula,") have led him to reflect rather more deeply on the subject before us. Had I told him, before this discussion was entered upon, that I could, by means of my own arm, and without the aid of any assistant artificial power, raise a ton weight above the level of my head, he would not, perhaps, have believed me; yet he knows very well, that if a ton weight were suspended but a few inches from the earth by a rope of sufficient strength and length, and from a prop of sufficient strength, there could be no difficulty, by gradually increasing the oscillations of the load, in attaining the required elevation,—nay, by the simple application of an equally simple contrivance, to retain the load at that very elevation when attained. Now, although throughout each oscillation of this pendulum, the effect of gravity from each descent of the weight may be said to be destroyed in the corresponding ascent, would the power of gravity, or would it not, be auxiliary in the accomplishment of this task?

With regard to 147 yards being too limited a distance to suit the trial of a fair experiment, Mr. Cheverton must blame the locomotive engine, not me. The inclined plane is $\frac{1}{4}$ mile in length, and if the Rocket engine had not sufficient power to reach a higher elevation, was it my fault? The experiments which were last tried will surely satisfy Mr. Cheverton that he has done me injustice, in supposing that I chose the worst engine, from any supposition that it would best support my arguments on this subject.

As it appears that the deductions which are

drawn by engineers from these experiments, are not fully understood by many who have perused the particulars of them, I shall beg your insertion of a diagram, published by the editor of the Manchester Guardian, which will probably be found to render my ideas as clear as they can be rendered on this subject:—



A B is a level line—B C, equal to B D, forming an undulation D B C, whose summits are of equal altitude.

The train of loaded carriages, weighing 150 tons, and moved by two engines, one dragging, the other propelling the load, had acquired from A to B (the length of this line being one mile on the railway,) a velocity of 30.28 miles an hour. On arriving at B the steam of the propelling engine was shut off, and the engine stopped. The train, then, partly by the momentum acquired in travelling over the level railway, and partly by the power of the remaining engine, ascended the inclined plane to the point C, viz. 575 yards, which was as far as the united locomotive force of one engine and the momentum could carry it. The power was then reversed, and the engine pushed the carriages back from C down the inclined plane to B, at which point it was found that the descending velocity was 31.70 miles an hour. Now, as the velocity of 30.28 miles an hour at B was sufficient, with the aid of one engine, to carry the whole train from B to C, what man living will dispute that a velocity of 31.70 miles an hour, at the same point, would, with the same engine, have enabled the train to ascend the line B D, which is supposed to be precisely equal to the line B C? On the contrary, would there not be a given velocity generated at the point D, which, the effective power of the engine being still continued, would have enabled the train to pass over another like undulation? If so, one engine could move 150 tons along the undulation C B D, which amount of tonnage she could not move on a level road, and which on a level road, whatever velocity was given to the train at starting, would bring the engine gradually to a halt.

But let Mr. Cheverton direct his attention to the two last experiments which were tried. If a momentum (momentum only), arising from a velocity at the point B of 19.04 miles per hour, carried the train 323 yards—say as far as e on the inclined plane B C—would not a momentum, arising from a velocity of 20.04 miles per hour, carry the same train to the point f up the ascent B D? If so, the Firefly engine proved her capability of moving 150 tons along an undulation e B f, by the employment of her power throughout only half the distance, and if this were the case over one undulation, will Mr. Cheverton deny that such would have been the case over succeeding undulations?

During the next week I may, perhaps, have an opportunity of trying a few more experiments: if so, they shall be transmitted to you. I have expressed my opinions to the Liverpool Directors, that the Firefly engine is capable of conveying from one summit of an undulation to another the enormous load of from 200 to 250 tons. I may have exceeded the limits of her power in this prophecy; but will Mr. Cheverton admit one point before he hears the result of any further experiments? viz. that if the Firefly, or any other engine, can move even 200 tons from summit to summit of one undulation, that she is capable of moving an equal load from one summit to another summit of a second or greater number of like undulations?

If so, what becomes of his weakest and most untenable argument, that all I gain is the comparatively trifling advantage which gravity gives me at the commencement of locomotion? I am, Sir, with great respect, your very obedient servant, RICHARD BADNALL.

October 29, 1833.

N. B.—The subject of friction, (trivial as Mr. Cheverton thinks it,) I shall not be ashamed to discuss in my general answer to "S. Y."

STEAM-CARRIAGES ON COMMON ROADS.—In the December number of the Repertory of Patent Inventions, we find the following account of the performance of a steam-carriage on common roads, which is deemed by many to be conclusive evidence of their ultimate success.

Steam-Carriages on Common Roads; with a Notice of the Journey to Stoney Stratford. [From the Repertory of Arts, &c.]

We are not disappointed in the expectations we hold out, that "steam-carriages might soon be expected on our common roads," a company being now formed for improving the roads, and running steam-carriages between London, Birmingham, Liverpool, and Holyhead: to be called the "London, Holyhead, and Liverpool Steam-Coach and Road Company," Consulting Engineer, Thomas Telford, Esq., Acting Engineer, John Macneill, Esquire.

From the moment that Sir Charles Dance introduced his carriage to Messrs. Maudslay and Field—and those gentlemen saw enough to induce them to undertake to make repairs and changes in the practical details—we were satisfied that the day was not far distant when this description of conveyance would become general; and it only required that the old carriage should be vamped up sufficiently to perform a journey of some extent, carrying such parties as could duly appreciate the performance; and who, from their practical experience, would judge whether sufficient had been done to justify them in lending their characters in the future advancement of this important project. The Brighton journey, from the admirable manner in which it was performed, naturally turned the attention of scientific men to the subject; and the regular running of the carriage between London and Greenwich for eight successive days (Sundays excepted), added to the general feeling, that enough had been accomplished to warrant that more decided steps should be taken to advance the introduction of steam conveyance on our common roads. Hence it was proposed by a number of influential individuals, that a further trial should be made of the engine, with a view to forming a company between London and Holyhead, should Mr. Telford and other engineers be of opinion that the application of steam on common roads had become practicable; and a proposition was made to Sir Charles Dance, that his steam-coach should run to Birmingham. We have already expressed our opinion that the carriage had performed more than could have been expected, from the inequality of many of its parts; and it would probably (as far as the public opinion was concerned) have been desirable not again to have put the carriage on the road; this was the opinion of many, particularly of Sir Charles Dance himself. The liberal manner however in which Mr. Telford and other engineers and scientific men had taken up the matter, and had tendered their talent to bring the carriage before the public, at once induced Sir Charles to give his approbation to the journey, more particularly as the engineers gave it as their opinion, that although they might not arrive at Birmingham, owing to the state of the carriage, together with the badness of some parts of the roads, they would be equally

well able to form a decided opinion from what the present carriage was capable of performing, as to what more might be expected from a new carriage built by practical workmen, and with due attention to the proper distribution of strength. The question to be decided was, whether the principle was good; if, after a fair trial, the answer should be in the affirmative, then there would be no doubt that, placed in practical hands, engines would be produced capable of performing with as much certainty as any other means of conveyance, and with an increased degree of speed and safety: on the other hand, should the opinion prove unfavorable, and the principle be considered defective, this knowledge must have determined Sir Charles Dance on abandoning all further attempts to realize his great undertaking. Having given these introductory remarks, we cannot but express our pleasure in recording the liberal manner in which the engineers and other scientific men have come forward to advance so great a national undertaking, and by their characters and talent have given weight to the cause in which Sir Charles has so long, so arduously, and we may now add, so successfully labored. We are happy in being able thus to state, that the question of the practicability of steam conveyance on our present roads is now set at rest; because we are aware that many and various reports have gone abroad with respect to the Birmingham trip; but we doubt not that the results which we have given will show, that what was performed on that day convinced all parties present that enough had been done.

We will conclude our notice of this subject, by giving a few particulars of the journey of the steam carriage from London to Stoney Stratford, taken from the note book of one of the gentlemen present. "On Friday, the first of November, 1833, Sir Charles Dance's steam carriage started from Gray's Inn Road, at about twenty minutes after three o'clock, A. M., passing through Highgate Archway, arrived at the Wellington (between five and six miles) in thirty-three minutes, the road being on the rise all the way. At this place coke and water were taken in. When again about to start, it was discovered that the weld at the joint of one of the tubes had given way, and that the water was flowing copiously; the carriage was run into the yard, and the fire put out, in order to repair the defect. Mr. Field, on examination, directed the man to cut out the defective part, and plug the ends; this was a work of time, owing to the want of tools. The object however was accomplished, and after four hours' delay the fire was again lighted, and the carriage once more took the road, and without further accident arrived at Stoney Stratford, fifty-two miles; at which place it was determined to dine and stay the night, and proceed forward next day to Birmingham. In the morning, on lighting the fire, it was discovered that the pipe was still defective, and would require to be removed that good joints might be made; this must necessarily cause delay. On a conversation of the parties it was generally agreed, that the practicability and economy of employing steam carriages as a means of transport for passengers on turnpike roads was fully established. The carriage remained at Stoney Stratford on Sunday, and was to have returned to town on Monday; but there being a meeting of magistrates and commis-

sioners of public works on that day, who expressed a desire of seeing the performance of the carriage, it was determined to delay the return till Tuesday, on which day it came to town, a distance of fifty-two miles, in four hours and forty-five minutes, even with the bad state of the roads.

"We have with pleasure spoken of the liberality of one party of individuals, we cannot pass over in silence the illiberality of others. Immediately on its being determined that the steam carriage should go to Birmingham, Mr. Macneill (one of the engineers of the Holyhead roads), assisted by Mr. Gordon, undertook to make arrangements for supplies of coke and water at proper distances; by this means it soon became generally known that the carriage was expected: and in addition to the already bad state of this portion of the roads (the St. Alban's trust), soft gravel to the depth of ten inches was laid over many parts, with a view to stop the carriage; but we leave this disgraceful conduct to receive its proper notice in the annual report to government of the commissioners and engineers of the roads. With the exception of this trust, the most liberal feeling was displayed by all parties and every facility afforded."

One of the principal roads having thus been taken up, and countenanced by some of our most celebrated engineers, leaves no doubt that attention will soon be called to other roads. An important benefit attending improving the present roads is, that the course of the traffic will remain unaltered; and thus the immense interests embraced on the "road sides," throughout the country, will retain and perhaps increase their value.

The subject of road making becoming thus a matter of the greatest importance, we hope to be able to give some particulars of the improvements which have been judiciously made on the Holyhead road; and we shall be happy to receive any information on this subject from our correspondents; for we are anxious to see every possible improvement introduced in our means of conveyance, whether on canals, railways, or common roads; we are advocates for all, for each means has its advantages; and we do not hesitate to say, that England is as much indebted for her prosperity to the facility of conveying her produce, as to any part of her economy.

Since writing the above, we have been favored with a copy of the report of the engineers who accompanied the carriage, which we subjoin.

Report of the Result of an Experimental Journey upon the Mail-Coach Line of the Holyhead Road, in Lieutenant Colonel Sir Charles Dance's Steam Carriage, on the 1st November, 1833.

Public attention having been attracted to the practicability of travelling with locomotive engines upon ordinary turnpike roads, by a report of a Committee of the House of Commons, of the 12th of October, 1831, stating that, in the opinion of the committee, the practicability of such mode of travelling had been fully established; and more recently by a report of a journey to and from Brighton having been successfully performed by Lieutenant Colonel Sir Charles Dance's steam carriage, as well as by the fact that the same carriage was daily in use between London and Greenwich, conveying numerous passengers through the crowded sub-

urbs of the metropolis without the slightest inconvenience to the public, we were desirous of personally making an experiment of the facility with which a carriage of that description could perform a journey of considerable length; and having selected the mail coach line of the Holyhead road for the purpose of such experiment, we made an arrangement with Sir Charles Dance for the use of his Carriage, on Friday, the 1st inst.

*The weight of the carriage, with the water, coke, and three persons upon it, was about - - - 3 tons, 5 cwt.

The weight of the omnibus coach attached to it - - - 1 " 0 "

The weight of the passengers, their luggage, and some additional sacks of coke, about 1 " 15 "

Making the gross weight moved, 6 tons, 0 cwt.

The motive power was an engine with two cylinders, seven inches in diameter and sixteen inches stroke. The pressure of steam on the tubes constituting the boiler, or generator, was not allowed to exceed 100 lbs. per square inch.

Before the carriage had proceeded six miles, one of the tubes of which Sir Charles Dance's boiler is composed was found to leak so fast as to render repair absolutely necessary: it was also apparent, that the size of the engine was not sufficient to carry so great a weight along a heavy road at any high velocity.

The weather was by no means favorable, there having been much rain in the course of the night and morning, so as to make the road heavy, added to which the winter coating of new materials had, in many places, been laid upon the road. Notwithstanding these obstacles, upon our arrival at Stoney Stratford, 52½ miles from town, it was found by Messrs. Macneill and Carpmael, who had taken accurate minutes of the loss of time occasioned by stoppages, that the average rate of travelling had been seven miles per hour.

Thus there can be no doubt, that with a well constructed engine of greater power, a steam carriage conveyance between London and Birmingham, at a velocity unattainable by horses, and limited only by safety, might be maintained; and it is our conviction that such a project might be undertaken with great advantage to the public, more particularly if, as might obviously be the case, without interfering with the general use of the road, a portion of it were to be prepared and kept in a state most suitable for travelling in locomotive steam carriages.

THOMAS TELFORD, President of the Society of Civil Engineers.

JOHN RICKMAN, Secretary and Commissioner of Highland Roads and Bridges.

C. W. PASLEY, Lieut. Col. Commanding the Royal Engineers, Chatham.

BRYAN DONKIN, Civil Engineer.

TIMOTHY BRAMAH, Civil Engineer.

JOHN THOMAS, Civil Engineer.

JOSHUA FIELD, Civil Engineer.

JOHN MACNEILL, Engineer to the Holyhead Roads.

ALEX. GORDON, Civil Engineer.

WM. CARPMAEL, Civil Engineer.

J. SIMPSON, Engineer to the Chelsea Water-Works.

London, November, 1833.

* These facts have been ascertained by Mr. Joshua Field, Mr. John Macneill, and Mr. Alexander Gordon, civil engineers.

Rochester, Feb. 28, 1834.

To the Editor of the Railroad Journal:

Sir,—Agreeably to your request, I forward the estimated expense of construction of the wood work on the plan suggested in my communication.

Reported expense to the directors of the Buffalo and Black Rock Railroad Company:

40560 feet, lineal measure, of round	
timber hewed on one side, at 2½ cts.	\$264 00
36960 feet of plank, \$12 per M.	443 52
7040 feet oak scantling, 2 by 4 inch, \$7, 49 28	
2640 lbs. spike, 8 in. (4 to the lb.) 8½ cts.	224 40
16 tons iron, 2 in. by ½ an in. \$55,	880 00
Additional security at the end by	
sills and iron, distribution of materials, accidentals, &c.	100 00
Labor in putting down road, (sills placed in the grade by the contractor for grading.)	84 00

Expense per mile, \$2045 20

The estimated cost of the construction of the Tonawanda railroad from Rochester to Attica, 43 miles, on this plan, with sills 12 inches in diameter, plank 2½ inches thick, 20 tons of iron per mile, spike 3 to the pound, as reported to the directors, is, per mile, \$2544 63.

The principal saving in the expense is in the grading. Where the surface conforms nearly to the level of the road, the line is cleared, the sills placed in their proper position, and ample ditches cut to form the grade. More than half of the distance of the Tonawanda railroad line is of this description, and can be prepared at a small expense per mile, in consequence of the change in the form of the wood work.

I have made arrangements for putting down with lime, in April, one mile on the Buffalo road, to be done in the following form, viz.: using 2½ bushels of stone lime per rod, 1½ bushels stacked and placed on the sills and over the surface of the grade before putting down the plank; one bushel made into grout and applied to the surface of the planking when the road is completed, covering the surface and filling the joints of the timber, and then covered with sand: Requiring 800 bushels per mile, at 10 cents, \$80 00

Labor 20 00

Expense per mile, \$100 00

You have anticipated on this form of road the use of common carriages. This manner of using the road was submitted to the commissioners of Tonawanda railroad in November last, with a view principally of using the first twenty miles from Rochester for market teams, allowing them to enter the road at certain hours in the forenoon, and afternoon to return, and so arranged as to not interfere with trains of cars; which would require the track to be five feet wide, in place of four feet nine inches, the usual width, which would not be materially objectionable. This question must be decided by experiment and circumstances.

I am, respectfully, yours,

ELISHA JOHNSON, Civil Engineer.

AMERICAN PATENTS IN ENGLAND.—The following extract of a letter from a gentleman in England, to his friend in this country, may be useful to those who desire to take out patents in Europe.

Extract of a letter from London, dated 14th December, 1833.

"It may be of use to apprise inventors of mechanical improvements in the United States, that it is essential to the security of their interests, if they design to take out patents for their inventions in this country, not to disclose the secret of their inventions in the United States until they have secured a patent here. There are many ingenious mechanics in the United States, in correspondence with their friends in this country, constantly upon the watch to seize any thing new and likely to be

useful, and to transmit the particulars to their friends, and thus forestal the rights and interest of the original inventor."

On the Causes of Spontaneous Combustion.

By J. A. B. [From the Journal of the Franklin Institute.]

I wish, through the medium of your Journal, to solicit the attention of some of your scientific readers to the causes of spontaneous combustion, generally; and with a view particularly to the investigation of those causes that are liable to produce it in cotton, woollen, and paper factories, from the stock, or waste, being accidentally impregnated with oils, or other substances.

As very few manufacturers are sufficiently acquainted with chemistry to determine accurately the causes of the effects which they may observe, it is therefore desirable that men of science, who have leisure, inclination, and information, (our correspondent has forgotten an important item, viz. means,) adequate to the task, should undertake and perform a series of experiments on the intermixture, or chemical combination, of different materials, together with the proportions, situations, degrees of heat, &c., requisite, in each case, to produce spontaneous combustion, and that publicity should be given to the same through the pages of this Journal.

The vast amount of capital invested in various kinds of manufactures, and the large number of mechanics and workmen of every grade and description, who are interested, either directly or indirectly, in the safety and prosperity of our factories, whose daily support and almost sole means of accumulating property are derived from their employment therein, all unite in the requisition.

It is confidently believed that many buildings have been destroyed by fire, originating in spontaneous combustion, and that there is frequently great danger, where it is least suspected.

To aid in the inquiry, agents and superintendents, as well as the observers in the several departments of factories, should unite in communicating such cases as may have come within their notice, together with such facts and circumstances as attended them.

To contribute my mite, I will give an account of the few instances that are within my knowledge, although my statements cannot be as detailed as I could wish, from my not having paid much attention to the subject at the time the observations were made.

The first instance of spontaneous combustion, or that which was apparently so, and was not otherwise accounted for, was in a quantity of wood ashes.

The ashes were in the body of an old waggon, with boards above, at the sides and ends, and had been accumulating for more than two years, to the amount of fifty bushels, or more. The ashes belonged to a very careful man, if the epithet is not altogether inapplicable to a person who would deposit ashes in a wooden vessel, whose constant custom was to have his ashes taken up from the hearth in a metallic vessel, and stand therein until entirely cold, before they were put into the usual place of deposit, and no danger was apprehended from this practice.

One evening about sunset, smoke was perceived to issue from the body of ashes, and it was first supposed that one of the domestics had, contrary to strict orders, put in some hot embers; but, on inquiry, it did not

appear that any ashes had been added for three days, and this appeared the more probable, as several vessels were then found standing full of ashes which had been taken up.

When the fire was discovered, it was expected that it was confined to a small spot only, and that a small quantity of water would be sufficient to extinguish it, but, on pouring water on the mass, the ashes were scattered very extensively, and on further examination it was found that the boards in several places were burnt almost through, and that the whole quantity of ashes was in a state of ignition like embers immediately from the fire. Nothing but a timely discovery prevented the destruction of a large portion of a village, for the buildings were all of wood, and so situated that the chance of saving one out of twenty would have been but very small.

I should be glad to throw some further light on this subject, but every thing else in relation to it was mere conjecture, and whether some oily substance was accidentally intermixed with the ashes, or was introduced by carelessness, or otherwise, or from what cause the combustion was produced, remains entirely unknown.

Instances have been known in which cotton has taken fire by wiping up with it oil that had been spilled, both linseed and sperm oil.

Weavers' harnesses in factories are varnished with a varnish made of the following materials, the same, in greater or less proportions, being used by different manufacturers: the usual ingredients are, linseed oil, spirits of turpentine, litharge, red lead, shellac, umber and India rubber. The composition is boiled down to a thick varnish, or laid on to the harness with a brush. The harness is usually made of cotton twine.

I once knew an instance in which a hank of twine, which was varnished for mending harness, took fire, spontaneously, while hanging to dry.

I mention this circumstance, because in many factories it is customary to varnish and hang the new harness to dry in the garret, or some other spare room of the mill, and likewise to lay away the old worn-out harness in the same place, and with very little caution as to the quantity that comes in contact: a practice that may lead to dangerous and destructive consequences.

I hope my remarks will not be considered irrelevant. It will readily be perceived that my object is, at this time, more to obtain than to communicate useful information.

Pittsfield, N. H., December 2, 1833.

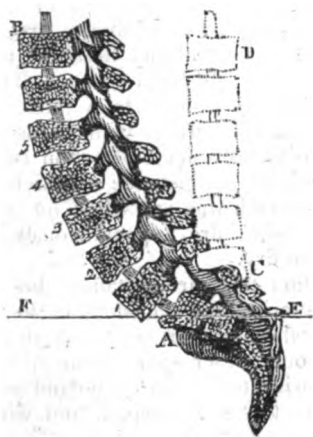
PRESERVATION OF SUBSTANCES BY MEANS OF ALKALIS.—M. Pryn has preserved, during many months, polished instruments of iron and steel, by keeping them in solutions of potash and soda,—saturated solutions diluted with one, two, or three times their weight of water. He at first thought that the preserving power depended upon the disappearance of the air, and the carbonic acid in the alkaline mixture, but he afterwards concluded that alkalinity acted an essential part in the phenomenon. In fact, a very small quantity of alkali is sufficient; thus, 2000 and even 3000 of caustic potash in water will preserve from oxidation bars of iron, &c. immersed in it. Lime water, diluted with its own weight of water, or of course without dilution, answers the same purpose. Alkaline carbonates and borax have the same effect, but they must necessarily be stronger.—[Revue Encyclopedique.]

Animal Mechanics, or Proofs of Design in the Animal Frame. Continued from page 120. [From the Library of Useful Knowledge.]

The human spine rests on what is called the *pelvis*, or basin: a circle of bones, of which the haunches are the extreme lateral parts; and the sacrum, (which is as the key-stone of the arch) may be felt at the lower part of the back. To this central bone of the arch of the pelvis, the spine is connected; and, taking the similitude of the mast, the sacrum is the *step* on which the base of the pillar, like the heel of the mast, is socketed or morticed. The spine is tied to the lateral parts of the pelvis by powerful ligaments, which may be compared to the shrouds. They secure the lower part of the spine against the shock of lateral motion or rolling; but instead of the stays, to limit the play of the spine forwards and backwards in pitching, or to adjust the rake of the mast, there is a very beautiful contrivance in the lower part of the column.

The spine forms here a semi-circle, which has this effect: that, whether by the exertion of the lower extremities, the spine is to be carried forward upon the pelvis, or whether the body stops suddenly in running, the jar which would necessarily take place at the lower part of the spine, A, if it stood upright like a mast, is distributed over several of the bones of the spine, 1, 2, 3, 4, and, therefore, the chance of injury at any particular part is diminished.

Fig. 6.



For example, the sacrum, or centre bone of the pelvis, being carried forward, as when one is about to run, the force is communicated to the lowest bone of the spine. But then the surfaces of these bones stand with a very slight degree of obliquity to the line of motion; the shock communicated from the lower to the second bone of the vertebrae is still in a direction very nearly perpendicular to its surface of contact. The same takes place in the communication of force from the second to the third, and from the third to the fourth; so that before the shock of the horizontal motion acts upon the perpendicular spine, it is distributed over four bones of that column, instead of the whole force being concentrated upon the joinings of any two, as at A.

If the column stood upright, as indicated at C D, it would be jarred at the lowest point of contact with its base. But by forming a semi-circle A B, the motion which, in the direction E F, would produce a jar on the very lowest part of the column, is distribu-

ted over a considerable portion of the column A B; and, in point of fact, this part of the spine never gives way. Indeed, we should be inclined to offer this mode to the consideration of nautical men, as fruitful in hints for improving naval architecture.

Every one who has seen a ship pitching in a heavy sea, must have asked himself why the masts are not upright, or rather why the foremast stands upright, whilst the main and mizen masts stand oblique to the deck, or, as the phrase is, rake aft, or towards the stern of the ship.

The main and mizen masts incline backwards, because the strain is greatest in the forward pitch of the vessel; for the mast having received an impulse forwards, it is suddenly checked as the head of the ship rises; but the mast being set with an inclination backwards, the motion falls more in the perpendicular line from the head to the heel. This advantage is lost in the upright position of the foremast, but it is sacrificed to a superior advantage gained in working the ship; the sails upon this mast act more powerfully in swaying the vessel round, and the perpendicular position causes the ship to tack or stay better; but the perpendicular position, as we have seen, causes the strain in pitching to come at right angles to the mast, and is, therefore, more apt to spring it.

These considerations give an interest to the fact that the human spine, from its utmost convexity near its base, inclines backwards.

CHAPTER III.

OF THE CHEST.—In extending the parallel which we proposed between the structure of the body and the works of human art, it signifies very little to what part we turn; for the happy adaptation of means to the end will every where challenge our admiration, in exact proportion to our success in comprehending the provisions which Supreme Wisdom has made. We turn now to a short view of the bones of the chest.

The thorax, or chest, is composed of bones and cartilages, so disposed as to sustain and protect the most vital parts, the heart and lungs, and to turn and twist with perfect facility in every motion of the body; and to be in incessant motion in the act of respiration, without a moment's interval during a whole life. In anatomical description, the thorax is formed of the vertebral column, or spine, on the back part, the ribs on either side, and the breast bone, or sternum, on the fore part. But the thing most to be admired is the manner in which these bones are united, and especially the manner in which the ribs are joined to the breast bone, by the interposition of cartilages or gristle, of a substance softer than bone, and more elastic and yielding. By this quality they are fitted for protecting the chest against the effects of violence, and even for sustaining life after the muscular power of respiration has become too feeble to continue without this support.

If the ribs were complete circles, formed of bone, and extending from the spine to the breast bone, life would be endangered by any accidental fracture; and even the rubs and jolts to which the human frame is continually exposed, would be too much for their delicate and brittle texture. But these evils are avoided by the interposition of the elastic cartilage. On their fore part the ribs are eaked out, and joined to the breast bone

by means of cartilages, of a form corresponding to that of the ribs, being, as it were, a completion of the arch of the ribs, by a substance more adapted to yield in every shock or motion of the body. The elasticity of this portion subdues those shocks which would occasion the breaking of the ribs. We lean forward, or to one side, and the ribs accommodate themselves, not by a change of form in the bones, but by the bending or elasticity of the cartilages. A severe blow upon the ribs does not break them, because their extremities recoil and yield to the violence. It is only in youth, however, when the human frame is in perfection, that this pliancy and elasticity have full effect. When old age approaches, the cartilages of the ribs become bony. They attach themselves firmly to the breast bone, and the extremities of the ribs are fixed, as if the whole arch were formed of bone unyielding and inelastic. Then every violent blow upon the side is attended with fracture of the rib, an accident seldom occurring in childhood, or in youth.

But there is a purpose still more important to be accomplished by means of the elastic structure of the ribs, as partly formed of cartilage. This is in the action of breathing, or respiration; especially in the more highly-raised respiration which is necessary in great exertions of bodily strength, and in violent exercise. There are two acts of breathing—*expiration*, or the sending forth of the breath, and *inspiration*, or the drawing in of the breath. When the chest is at rest, it is neither in the state of expiration nor in that of inspiration; it is in an intermediate condition between these two acts. And the muscular effort by which either inspiration or expiration is produced, is an act in opposition to the elastic property of the ribs. The property of the ribs is to preserve the breast in the intermediate state between expiration and inspiration. The muscles of respiration are excited alternately, to dilate or to contract the cavity of the chest, and, in doing so, to raise or to depress the ribs. Hence it is, that both in inspiration and in expiration, the elasticity of the ribs is called into play; and, were it within our province, it would be easy to show that the dead power of the cartilages of the ribs preserve life by respiration, after the vital muscular power would, without such assistance, be too weak to continue life.

It will at once be understood, from what has now been explained, how, in age, violent exercise or exertion is under restraint, in so far as it depends on respiration. The elasticity of the cartilages is gone, the circle of the ribs is now unyielding and will not allow that high breathing, that sudden and great dilating and contracting of the cavity of the chest, which is required for circulating the blood through the lungs, and relieving the heart amidst the more tumultuous flowing of the blood which exercise and exertion produce.

CHAPTER IV.

DESIGN SHOWN IN THE STRUCTURE OF THE BONES AND JOINTS OF THE EXTREMITIES.—That the bones which form the interior of animal bodies should have the most perfect shape, combining strength and lightness, ought not to surprise us, when we find this in the lowest vegetable production.

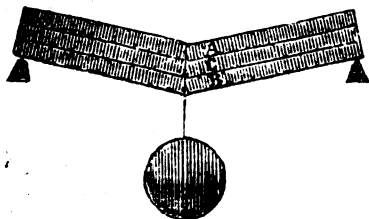
In the sixteenth century, an unfortunate man who taught medicine, philosophy, and

theology, was accused of atheistical opinions, and condemned to have his tongue cut out, and to suffer death. When brought from his cell before the inquisition, he was asked if he believed in God. Picking up a straw which had stuck to his garments, "If," said he, "there was nothing else in Nature to teach me the existence of a Deity, even this straw would be sufficient?"

A reed, or a quill, or a bone, may be taken to prove that in Nature's works strength is given with the least possible expense of materials. The long bones of animals are, for the most part, hollow cylinders, filled up with the lightest substance, marrow; and in birds the object is attained by means (if we may be permitted to say so) still more artificially. Every one must have observed, that the breast bone of a fowl extends along the whole body, and that the body is very large compared with the weight; this is for the purpose of rendering the creature specifically lighter, and more buoyant in the air; and that it may have a surface for the attachment of muscles, equal to the exertion of raising it on the wing. This combination of lightness with increase of volume is gained by air cells extending through the body, and communicating by tubes between the lungs and cavities of the bones. By these means the bones, although large and strong, to withstand the operation of powerful muscles upon them, are much lighter than those of quadrupeds.

The long bones of the human body being hollow tubes, are called cylindrical, though they are not accurately so, the reason of which we shall presently explain; and we shall at the same time show that their irregularities are not accidental, as some have imagined. But let us first demonstrate the advantage which, in the structure of the bones, is derived from the cylindrical form, or a form approaching to that of the cylinder. If a piece of timber, supported on two points, thus—

Fig. 7.

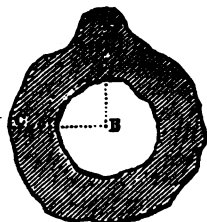


bearing a weight upon it, it sustains this weight by different qualities in its different parts. For example, divide it into three equal parts (A, B, C); the upper part, A, supports the weight by its solidity and resistance to compression; the lowest part, B, on the other hand, resists by its toughness, or adhesive quality. Betwixt the portions acting in so different a manner, there is an intermediate neutral, or central part, C, that may be taken away without materially weakening the beam, which shows that a hollow cylinder is the form of strength. The writer lately observed a good demonstration of this: a large tree was blown down, and lay upon the ground; to the windward, the broken part gaped; it had been torn asunder like the snapping of a rope. To the leeward side of the tree, the fibres of the stem were crushed into one another and splintered, whilst the central part remained entire. This, we presume, must be always the case, more

or less; and here we take the opportunity of noticing why the arch is the form of strength. If this transverse piece of timber were in the form of an arch, and supported at the extremities, then its whole thickness, its centre, as well as the upper and lower parts, would support weight by resisting compression. But the demonstration may be carried much farther to show the form of strength in the bone. If the part of the cylinder which bears the pressure be made more dense, the power of resistance will be much increased; whereas, if a ligamentous covering be added on the other side, it will strengthen the part which resists extension, and we observe a provision of this kind in the tough ligaments which run along the vertebræ of the back.

When we see the bone cut across, we are forced to acknowledge that it is formed on the principle of the cylinder; that is, that the material is removed from the centre, and accumulated on the circumference, thus:

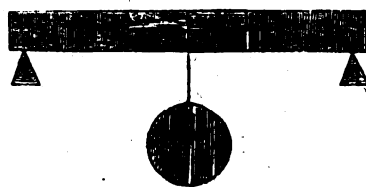
Fig. 8.



We find a spine or ridge running along the bone, which, when divided by the saw in a transverse direction, exhibits an irregularity, as at A.

The section of this spine shows a surface as dense as ivory, which is, therefore, much more capable of resisting compression than the other part of the cylinder, which is common bone. This declares what the spine is, and the anatomists must be wrong who imagine that the bone is moulded by the action of the muscle, and that the spine is a mere ridge, arising by accident among the muscles. It is, on the contrary, a strengthening of the bone in the direction on which the weight bears. If we resume the experiment with the piece of timber, we shall learn why the spine is harder than the rest of the bone. If a portion of the upper part of the timber be cut away, and a harder wood inserted in its place, the beam will acquire a new power of resisting fracture, because, as we have stated, this part of the wood does not yield, but by being crushed, and the insertion of the harder portion of wood increases this

Fig. 9.



property of resistance. With this fact before us, we may return to the examination of the spine of bone. We see that it is calculated to resist pressure: first, because it is farther removed from the centre of the cylinder, and, secondly, because it is denser, to resist compression, than the other part of the circumference of the bone.*

* As the line A B extends farther from the centre than B C, on the principle of a lever, the resistance to transverse fracture will be greater in the direction A B than B C.

This explanation of the use of a spine upon a bone gives a new interest to osteology.* The anatomists ought to deduce from the form of the spine the motions of the limb; the forces bearing upon the bone, and the nature and the common place of fracture; while, to the general inquirer, an agreeable process of reasoning is introduced in that department, which is altogether without interest when the "irregularities" of the bone are spoken of, as if they were the accidental consequences of the pressure of the flesh upon it.

Although treating of the purely mechanical principle, it is, perhaps, not far removed from our proper object to remark, that a person of feeble texture and indolent habits has the bone smooth, thin, and light; but that Nature, solicitous for our safety, in a manner which we could not anticipate, combines with the powerful muscular frame a dense and perfect texture of bone, where every spine and tubercle is completely developed. And thus the inert and mechanical provisions of the bone always bear relation to the muscular power of the limb, and exercise is as necessary to the perfect constitution of a bone as it is to the perfection of the muscular power. Jockies speak correctly enough when they use the term "blood and bone," as distinguishing the breed or gencalogy of horses; for blood is an allowable term for the race, and bone is so far significant, that the bone of a running horse is remarkably compact compared with the bone of a draught horse. The reader can easily understand that the span in the gallop must give a shock in proportion to its length; and, as in man, so in the horse, the greater the muscular power the denser and stronger is the bone.

The bone not being as a mere pillar, intended to bear a perpendicular weight, we ought not to expect uniformity in its shape. Each bone according to its place bears up against the varying forces that are applied to it.

* Osteology, from the Greek words, signifying discourse on bone, being the demonstration of the forms and connection of the different bones.

THE JACKSON COTTON GIN.—Mr. James Lynch, an ingenious mechanic of this place, has invented a new kind of Cotton Gin, to which he has given the above title. We should suppose from the name that it was intended to operate with a powerful impulse.

We have seen a model of the gin; but owing to the fact that we are not much acquainted with machinery of the kind, we are unable to speak with certainty of its advantages. It differs from the common gin in these respects: it contains three separate sets of cylindrical pickers, which are shorter and smaller than the common saw cylinder—and the teeth are finer. The arrangement of these pickers is one above another, the largest set being below, and presenting a front a little convex. The breast or ribs are of a peculiar form, not easily described, and wrought or cast of one piece of sheet metal. The seed cotton rolls in the hopper as in other gins, and is taken from all the pickers and thrown out at the flue, by one cylindrical brush. All the cylinders turn upon points, and are driven by two belts, passing over a drum in the rear of the machine.

The advantages of this gin are supposed to consist in its despatch; its requiring less power; occupying less space; being less

apt to cut or injure the staple; picking cleaner; being less liable to take fire from friction; and from its being less liable to choke and get out of repair, than those now in use.

Mr. Lynch intends going to Pittsburg shortly, with a view of procuring castings for this and other machinery. We wish him much success in the laudable enterprise.

AGRICULTURE, &c.

[From the New-York Farmer.]

SHORT HORN DURHAM AND DEVON CATTLE.—

A writer in the Genesee Farmer, under the signature of Ulmus, has collected the opinions of breeders on the comparative merits of these cattle, and given his in favor of the Durham, particularly for the heavy pastures of the West. He has omitted to state one objection to this breed. Butchers in New-York, and we believe generally, have prejudices against them. They think their meat is coarser and darker, and that the great depth or thickness of the flesh, unlined or unmarbled with fat, makes this beef more difficult to be cut up for retail with a suitable proportion of flesh and fat. If these objections are well founded, they should have consideration with those who are about to enter into this branch of husbandry. It should be recollected, too, that we have not, as in Great Britain, a large navy and army to consume our heavy beefs, but must depend on our large cities and towns for a market for fine beefs.

LIME SPREADING.—We last week had an opportunity of witnessing the performance of a machine for spreading lime invented by Mark Wilson, of this county, and by him patented. Although the machine was much worn, being one of the first constructed, it spread near a hundred bushels in an afternoon. It is quite simple, and could be made, with the exception of the cog-wheels, by any one accustomed to the use of the saw and hatchet. It spreads the lime in any proportion desired, from 10 to 70 bushels to the acre, and with more uniformity than can be done with a shovel. The machines are made for one or two horses, and it is ascertained that two men can spread, with a two-horse machine, four hundred bushels per day. It can be used in windy as well as in calm weather, no inconvenience arising from the dust therefrom.

We conceive it to be an improvement of much consequence to farmers, who make use of lime as manure, entirely doing away a most disagreeable yet necessary branch of their business. The machines, for two horses, cost about 30 or 35 dollars, and as no one farmer could have constant use for them, by three or four joining together, the expense would be so trifling that we should presume every neighborhood would be able to have among them one of these labor-saving machines.—[Bucks Co. Intell.]

ON THE CULTURE OF THE GARDEN BEAN.—

I have been very successful for half-a-dozen years in obtaining two crops of beans from the same plants. In the summer of 1826, my first crop of magazan and early long-pod beans was, by a very strong and violent wind, blown down; this was done when the beans were in full blossom. The crop from the blossoms which the plants then possessed was very fine and abundant, and gathered during July. In three weeks after the beans were prostrated, each stem pushed forth from near the root one or more, in some instances four to six fresh stems; these bloomed freely and produced an abundant crop, which was gathered during September. Since that grew, I have uniformly bent down, so as to break the stalk near the root, my first and se-

cond crops of beans; I have by this means obtained four crops of beans from two sowings, and which supplied me from July 1st to 31st October. By this method only half the seed was required which I had been accustomed to use, and the greatest advantage to me was that only half the ground was required, so that my advantages by this method are fourfold. I always pinch out the tops when the plants are in full bloom; this throws the vigor into the production of fruit instead of a continued increase of stem and foliage.—[Mr. James Falkland, Pentonville, in the Gardener's and Forester's Record, No. 3.]

ON BREEDING HORSES.—[By T. A. KNIGHT, Esq. of Downton, Herefordshire.]—Having introduced, for the use of my tenants, a high priced stallion, of the breed of the large London dray horse, I wish to state to agriculturists the grounds upon which I anticipate much advantage from the introduction of so large an animal. He will, I have reason to believe, be, when full grown, not less than seventeen hands high, and very compact in form.

I conceive myself to have proved, by many experiments, of a part of which an account was published some years ago in the Philosophical Transactions, that the length of the legs of the offspring of all those animals which nature has intended to accompany their parents in flight, at an early age, is governed wholly by the habits of the female parent. This tribe of animals comprehends the horse, the cow, the sheep, and deer, and many others. If the female parent be of low stature, and descended from a breed of a similar form and size, the length of the legs of the offspring will be short, and will not be increased in length, though they will in strength, by any influence of its male parent, however tall and large that may have been; and the converse of this proposition will be found to be equally true.

The experience of almost every farmer must have taught him that horses with drop shoulders and bodies, and capacious chests, are more capable of bearing hard and long-continued labor than those of which the shoulders, and of course the chests, are shallow, and the legs long; but comparatively few know how rapidly the powers of draught of any animal mechanically decrease with the increasing length of the legs, comparatively with the depth of the shoulders and body. If a horse, proportioned as English horses now generally are, be sixteen hands high, his fore legs, measured from the elbow joint, will be about three feet, or nine hands high, and his shoulder about two feet four inches, or seven hands high. If such a horse be able to raise, by means of a cord passed over a pulley, a weight of a thousand pounds, another horse similar to that in every other respect, except that of having its legs eight inches shorter, would, on account of the mechanical advantage of its form, be able to raise twelve hundred and fifty pounds, or one-fourth more, with considerably less exertion; for his power would increase with the diminished length of his legs, nearly in the same proportion as the power of the weight upon the longer arms of the steelyards is increased by being made to recede from the point of suspension; and if the length of the leg of such horse, comparatively with the depth of the shoulder, were further diminished, its power would increase in an accumulating ratio. The enormous strength of a bull of mature age affords familiar evidence of the truth of these positions; and I doubt much whether the offspring of a Norwegian pony, and a strong and low draught mare, would not be found capable of drawing a heavier weight up hill, to any considerable distance, than the largest horse of the ordinary form and proportion; whilst it would not, probably, exceed two-thirds of its weight, nor require more than two-thirds the quantity of food; and it would possess much more activity, and be much less subject to accidents. And I have good reason to believe that more perfect animals, for supplying mankind with food, may generally be obtained by cross-breeding from

females of small, and male animals of large size, than from any breed of fixed and permanent habits, relatively to size.—[Farmer's Magazine.]

CALVES.—The following method of managing calves strikes us as being correct, particularly when the cow gives an abundance of milk. When the supply is small, we should suppose the calf would require additional food besides the milk.

"A friend of ours," says the Genesee Farmer, "has been very successful for many years in producing veal of the finest quality, by the following method: During the first fortnight, the calf is allowed one-half the milk, three-quarters during the third week, and the whole during the fourth week. This is his rule for common cows. In extraordinary cases, he allows more or less, according to circumstances; but deems it of great importance that the calf should be full fed during the last week."

"The reason which is given for this practice is, that if the calf takes all the milk at first, it will grow fast, and soon become too large for its supply of nourishment; but if it be stinted at first, its mother's milk will be commonly sufficient to fatten it at the close of the month."

FEEDING LIVE STOCK IN WINTER.—There is perhaps nothing relating to rural economy in which farmers differ more, both in theory and practice, than in feeding their cattle in the winter season. We speak not now of the different kinds of fodder, or of their comparative value in the feeding of stock, but merely of the manner and frequency with which the cattle are fed.

Many farmers believe it indispensable, both as to the good condition of their stock and the greatest economy of fodder, to feed them five times, at least, each day, during the winter; while others practise feeding but three or four times in a day; and again, others but twice.

Experiment alone can prove which of these modes of feeding will carry stock through the winter in the highest order, and with the least expense of fodder. Our own experience, on the subject, is decidedly in favor of feeding but twice in a day. More than twenty years' observation and experience in the keeping of stock, in a climate where, on an average, dry fodder is required to be given more than seven months in the year, has given us an opportunity to test the value of the several modes of feeding above mentioned. We were first induced to try the experiment of feeding twice in a day only, from information communicated to us by a very intelligent and successful farmer, in a neighboring town. He said he had, a few years before, had occasion to call on a farmer's widow to aid in the appraisal of several cows, and found them near the end of the winter in such high order as to draw his particular attention.

He inquired of the widow, particularly, the manner in which they had been kept, and found she had given them nothing but hay, through the winter; and that in consequence of having no man or boy to attend her stock, she had been obliged to do it herself; and being in rather feeble health, she had never fed them but twice a day. This led him to examine particularly as to the kind and quality of the hay with which the cows had been fed. He found the hay not so good as his own, while the cows were in much higher order than his; though his had been fed five times a day through the winter.

From a knowledge of these facts, he afterward adopted the same mode of feeding, giving his cattle just so much twice in each day, as they would eat up perfectly clean, and no more; and has since found it, by experience, both a saving of fodder and a benefit to his stock. From this information we adopted the practice of feeding but twice in a day, something more than ten years ago, and have found, or think we have found, the same favorable results.—[Northern Farmer.]

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MARCH 1-7, 1834.

LITERARY NOTICES.

No. XVII.

Dorr Prairie. (Indiana,) Dec. 29, 1833.

Being now on the mail route between Detroit and Chicago, I am travelling very comfortably in a four-horse wagon, with the gentleman mentioned in my last. I found my horse's back so sore at White Pigeon, that it was unpleasant to use him longer under the saddle; and having met with my trunk at Niles, which was forwarded from Monroe by a friend, I am in a measure compelled to adopt what is certainly the most agreeable mode of travelling at this season through a bleak prairie country.

The cold winter moon was still riding high in the heavens, as we ferried over the St. Josephs at Niles this morning. A low-sided scow was the means of conveyance; and after breaking the solid ice near the shore, to loose us from our moorings, it required some pains to shun the detached cakes, which came driving down the centre of the dark rolling river, which, near the opposite shore, had become so wedged and frozen together, that it required considerable exertion to break a way with our long poles, and make good our landing. At length, ascending the bank, a beautiful plain, with a clump of trees here and there upon its surface, opened to our view. The establishment of the Casey Mission, a long, low, white building, could be distinguished afar off, faintly gleaming in the moonlight, while several lodges of the Pottawattamies, three or four hundred of which tribe inhabit this fine district, were plainly perceptible over the plain. The moon, indeed, shone with an effulgence such as I have never witnessed, except beneath the pearly skies of the West. Morning came at last, still, but excessively cold, our horses' manes and our own clothes being covered with hoar-frost, while each blade of grass that shot its wilted spear above the snow, glistened like a diamond's point beneath the uprising sun.

About 10 o'clock, we reached a shantee on Terre Coupee prairie, and finding only a boy of six years old at home, rummaged the whole establishment to find the materials for a breakfast, which we cooked ourselves. Our next stage carried us over a rolling prairie to Laporte. The undulating surface resembled the ground swell of the sea, and nothing could be more dreary at this season when the bright sky of the morning became overcast, than moving mile after mile over this frozen lake—for such it appeared—with nothing but its monstrous swell to catch the eye, wherever its glances roamed.

It was afternoon when we reached the little settlement of Laporte, which is situated on a pretty lake in a prairie of the same name, the skirts of which are beautifully timbered. There was just light enough remaining when we reached our present stopping place, a comfortable log cabin, to see the opening ahead through the timber from which this prairie takes its name. It forms a door opening upon an area of the Grand Prairie which runs through the States of Michigan and Illinois, and extends afterwards, if I mistake not, to the base of the Rocky Mountains. I am now in the land of the Hoosers, and find that long-haired race much more civilized than some of their Western neighbors are willing to represent them. The term "Hoosher," like that of Yankee, or Tuckahoe, first applied contemptuously, has now become a sort of national epithet, by which the inhabitants of this fine State are proud to be distinguished. This part of the State is as yet but thinly settled, but the land is now rapidly coming into market; and it is calculated to support a dense population. A new town and harbor called "Michigan City," about 30 miles off, on the shore of the Lake, is fast coming into notice, and giving a spur to the settlement in these parts. The

country is, however, still wild enough, and I have a wilder yet to pass, before reaching Chicago.

Chicago, Jun. 1, 1834.

We left the prairie on the east, after passing through the door, and entered a forest, where the enormous black walnut and sycamore trees cumbered the soil with trunks, from which a comfortable dwelling might be excavated. The road was about as bad as could be imagined; and, after riding so long over prairies as smooth as a turnpike, the stumps and fallen trees over which we were compelled to drive, with the deep mud-holes into which our horses continually plunged, were anything but agreeable. Still, the stupendous vegetation of the forest interested me sufficiently to make the time, otherwise enlivened by good company, pass with sufficient fleetness, though we made hardly more than two miles an hour, throughout the stage. At last, after passing several untenanted sugar camps of the Indians, who, of course, were elsewhere at this season, we reached a cabin prettily situated on the banks of a lively brook, winding through the forest. A little Frenchman waited at the door to receive our horses, while a couple of half intoxicated Indians followed us into the house, in the hope of getting *a'netos* (vulgarily a treat) from the newcomers. The usual settlers' dinner of fried bacon, venison cutlets, hot cakes, and wild honey, with some tolerable tea and Indian sugar, as that made from the maple tree is called at the West, was soon placed before us, while our new driver, the frizzly little Frenchman, already mentioned, harnessed a fresh team, and hurried us into the wagon, as soon as possible. The poor little fellow had 30 miles to drive before dark, on the most difficult part of the route of the line between Detroit and Chicago. It was easy to see that he knew nothing of driving; the moment he took his reins in hand; but when one of my fellow-travellers mentioned that little Victor had been preferred to his present situation of trust from the indefatigable manner in which, before the stage route was established last season, he had for years carried the mail through this lonely country—swimming rivers and sleeping in the woods at all seasons,—it was impossible to dash the mixture of boyish glee and official pomposity with which he entered upon his duties, by suggesting any improvement as to the mode of performing them. Away then we went helter skelter through the woods—scrambled through a brook, and galloping over an arm of the prairie, struck again into the forest. A fine stream, called the Calamine, made our progress here more gentle for a moment.—But immediately on the other side of the river was an Indian trading post, and our little French Phaeton, who, to tell the truth, had been repressing his fire for the last half hour, while winding among the decayed trees and broken branches of the forest, could contain no longer. He shook the reins on his wheel horses, and cracked up his leaders with an air that would have distinguished him on the Third Avenue, and been envied at Cato's. He rises in his seat as he passes the trading house; he sweeps by like a whirlwind; but a female peeps from the portal, and it is all over with poor Victor. That backward glance which he now casts behind to see the impression he has made upon the fair, is fatal to his triumph. The infuriate car strikes a stump, and the unlucky youth shoots off at a tangent, as if he were discharged from a mortar. The whole operation was completed with such velocity, that the first intimation I had of what was going forward was on finding myself two or three yards from the shattered wagon, with a tall Indian in a wolfskin cap standing over me.—My two fellow passengers were dislodged from their seats with the same want of ceremony; but though the *disjecta membra* of our company were thus prodigally scattered about, none of us providentially received injury. Poor Victor was terribly crest fallen; and had he not

unpacked his soul by calling upon all the saints in the calendar in a manner more familiar than respectful, I verily believe that his tight little person would have exploded like a torpedo.—A very respectable looking Indian female, the wife probably of the French gentleman who owned the post, came out and politely furnished us with basins and towels to clean our hands and faces, which were sorely bespattered with mud, while the grey old Indian before mentioned assisted in collecting our scattered baggage. The spot where our disaster occurred was a sequestered, wild-looking place. The trading establishment, consisted of 6 or 8 log cabins of a most primitive construction, all of them grey with age, and so grouped on the bank of the river as to present an appearance quite picturesque. There was not much time, however, to be spent in observing its beauties. The sun was low, and we had 29 miles yet to travel that night before reaching the only shantee on the lake shore. My companions were compelled to mount two of the stage horses, whilst I once more put my saddle on mine, and leaving our trunks to follow a week hence, we slung our saddle bags across the cruppers and pushed directly ahead. A few miles easy riding through the woods brought us to a dangerous morass, where we were compelled to dismount and drive our horses across, one of the party going in advance to catch them on the other side. A mile or two of pine barrens now lay between us and the shore, and winding rapidly among the short hills covered with this stunted growth, we came suddenly upon a mound of white sand at least fifty feet high. Another of these desolate looking eminences, still higher, lay beyond. We topped it; and there, far away before us, lay the broad bosom of Lake Michigan—the red disk of the sun just sinking beneath it, and the freshening night-breeze beginning to curl its limpid waters on the shore; and now having gained their verge, whichever way we turned, there was nothing discernible but the blackening lake one side and these conical hills of shifting white sand on the other. Some of them, as the night advanced and objects were only discernible by the bright starlight, assumed a most fantastic appearance, and made me regret that I could not visit the "Sleeping Bear" and other singularly formed mounds which many miles farther to the north, swell from two to three hundred feet above the level of the lake. The deep sand into which our horses sunk to the fetlocks was at first most wearisome to the poor beasts, and having twenty miles yet to travel entirely on the lake shore, we were compelled, in spite of the danger of quicksands, to move as near the water as possible. But though the day had been mild, the night rapidly became so cold that, before we had proceeded thus many miles, the beach 20 yards from the surf was nearly as hard as stone, and the finest McAdamized road in the world could not compare with the one over which we now galloped. Nor did we want lamps to guide us on our way. Above, the stars stood out like points of light, while the resplendent fires of the Aurora Borealis shooting along the heavens on our right, were mocked by the livid glare of the Kankakee marshes burning behind the sand hills on our left. The lake alone looked dark and lowering; though even its gathering waves would smile when touched with light as they broke upon the shore. The intense cold seemed to invigorate our horses; and dashing the fire from the occasional pebbles, they clattered along the frozen beach at a rate that brought us rapidly to our destination for the night. It was a rude cabin, built of the trunks of the stunted pines around, standing behind a sandy swell about two hundred yards from the shore. My fingers were numb with cold; and seeing a rough looking fellow moving from the door towards the horses of my companions, I requested him to take mine also; but upon his politely rejoining that "he was nobody's hostler but his own" I could only wish him a more civil master, and proceeded to take care of the

animal myself. A brake of stunted evergreens, near by, supplied the place of a stable; and passing a whisp of dry grass over the reeking limbs of my four-footed friend, I flung my cloak over his back and tethered him for the night. The keeper of the rustic hostelry came up just as I got through with this necessary task, and explaining to me that the insolent loungeur was a discharged stage driver, returned with me to the house for a measure of corn; while I, guided by the light flickering through the crevices of his frail dwelling rejoined my companions nestled with two other half-frozen travelers around the grateful fire within. The strangers were both western men; one the brother of a distinguished poet in New York, for sometimes settled in Illinois; and the other an Indian trader of long standing in Chicago. Warlike incidents in border story and the pacific dealings between the whites and Indians, formed the chief subjects of conversation, which soon became general, and was prolonged to a late hour: finally the late treaty held at Chicago—at which, as you have probably seen in the newspapers, several thousand Indians were present—was discussed, and the anecdotes that were told of meanness, rapacity, and highway robbery, (in cheating, stealing, and forcibly taking away) from the Indians, exasperated me so that I expressed my indignation and contempt in unmeasured terms. The worthy trader, who was a middle aged man, of affable, quiet good manners, seemed to sympathize with me throughout; but the whole current of my feelings was totally changed; when, upon my observing shortly afterwards to another gentlemen that "I should have liked to have been at Chicago a year ago," my warm coadjutor ejaculated from under the blanket where he had in the meantime bestowed himself—"ah, sir, if you had, the way in which you'd have hooked an Indian blanket by this time would be curious." The chivalric knight of La Mancha, himself, could not have sustained heroics under such a home thrust, but must have burst into the hearty laugh in which I was joined by all present. The hour of sleep for all at last arrived, and a couple of wooden bunks, swung from the roof, falling to the lot of those who had come in first, I wrapped myself in a buffalo skin and placing my saddle under my head for a pillow, soon "slept like a king;" a term, which, if

"Uneasy lies the head that wears a crown," be true doctrine, is, probably, *quasi lucus* &c.

Our transient acquaintances parted from us in a most friendly manner in the morning; and after waiting in vain till near noon to see if by any chance little Victor might not be able to forward our trunks, to this point, we mounted once more, and pushed ahead with all speed to accomplish the remaining 20 or 30 miles between the shantee and Chicago. Our route was still along the shore; and after passing around the end of the lake and taking a northwardly direction, the way in which the ice would come down the bleak shore of the lake "was curious." We galloped at full speed, every man choosing his own route for himself along the beach, our horse's hoofs ringing the while as if it were a pavement of flint beneath them. The rough ice piled up on the coast prevented us from watering our beasts; and we did not draw a rein till the rushing current of the Calumine, which debouches into Lake Michigan some 10 miles from Chicago, stayed our course. A cabin on the bank gave us a moment's opportunity to warm, and then being ferried over the wintry stream, we started with fresh vigor, and crossing about a mile of prairie in the neighborhood of Chicago, reached here in time for an early dinner. Our horses this morning seem none the worse for this furious riding, their escape from ill consequences being readily attributable to the excellence of the road and the extreme coolness of the weather while travelling it. For my own part, I never felt better than after this violent burst of exercise. We had

not been here an hour before an invitation to a public ball was courteously sent to us by the managers; and though my soiled and travel-worn riding dress was not exactly the thing to present one's self in before ladies of an evening, in my earnestness to see life on the frontier, I easily allowed all objections to be overruled by my companions, and we accordingly drove to the house in which the ball was given. It was a frame building, one of the few as yet to be found in Chicago, which, although one of the most ancient French trading posts on the lakes, can only date its growth as a village since the Indian war 18 months since. When I add that the population has *quintupled* last summer, and that but few mechanics have come in with the prodigious increase of residents, you can readily imagine that the influx of strangers far exceeds the means of accommodation, while scarcely a house in the place, however comfortable looking outside, contains more than two or three finished rooms. In the present instance, we were ushered into a tolerably sized dancing-room, situated over a lath and plastered parlor and bar-room, and having its once green walls so ingeniously covered with pine branches and flags borrowed from the garrison, that with the finished ceiling above, it presented a very complete and quite pretty appearance. It was not so warm, however, that the fires of cheerful hickory which roared at either end could have been readily dispensed with. An orchestra of unplained boards was raised against the wall, in the centre of the room, the band consisting of a tall dandy negro, with his violin, a fine military-looking bass drummer from the fort, and a volunteer citizen, who alternately played an accompaniment upon the flute and triangle. Blackee, who flourished about with a great many airs and graces, was decidedly the king of the company, and it was amusing, while his head followed the direction of his fiddle bow with pertinacious fidelity, to see the Captain Manuel-like precision with which the soldier dressed to the front on one side, and the nonchalant air of importance which the cit attempted to preserve on the other. As for the company, it was such a complete medley of all ranks, ages, professions, trades and occupations, brought together from all parts of world, and now for the first time met together that it was amazing to witness the decorum with which they commingled on this festive occasion. The managers, (among whom were some officers of the garrison,) must certainly be *au fait*, at dressing a lobster and mixing champagne punch in order to have produced a harmonious compound from such a collection of contrarieties. The gayest figure that was ever called by quadrille playing, Benoit, never afforded me half the amusement that did these Chicago cotillions. Here you might see a veteran officer in full uniform balancing to a tradesman's daughter still in her short frock and trousers, while there the golden aiguillette of a handsome surgeon flapped in unison with the glass beads upon a scrawney neck of 50. In one quarter the high placed buttons of a lindsey woolsey coat, would be *dos a dos* to the elegantly turned shoulders of a delicate looking southern belle, and in another a pair of cinderella like slippers would chasseur cross with a brace of thick soaled broghans, in making which, one of the lost feet of the Colossus of Rhodes, may have served for a last. Those raven locks dressed a *la Madonne*, over eyes of jet, and touching a cheek where blood of a deeper hue mingling with the less glowing current from European veins, tell of a likeness drawn from the original owners of the soil; while these golden tresses floating away from eyes of heaven's own color over a neck of alabaster recall the Gothic ancestry of some of "England's born." How piquantly do these trim and beaded leggings peep from under that simple dress of black, as its tall nut-brown wearer moves as if unconsciously through the graceful mazes of the dance. How divertingly do those inflated gigots, rising like windmills from that little Dutch-

built hull, jar against those tall plumes, which impend over them like a commodore's pennant on the same vessel. But what boots all these incongruities, when a spirit of festive good humor animates every one present. "It takes all kinds of people to make a world" (as I hear it judiciously observed this side the mountains) and why should not all these kinds of people be represented as well in a ball-room as in a legislature? At all events, if I wished to give an intelligent foreigner a favorable opinion of the manners and deportment of my countrymen in the aggregate, I should not wish a better opportunity, after explaining to him the materials of which it was composed, and the mode in which they were brought together from every section of the Union, than was afforded by this very ball. "This is a scene of enchantment to me, sir," observed an officer to me, recently exchanged to this post, and formerly stationed here. "There were but a few traders around the fort when I last visited Chicago, and now I can't contrive where the devil all these well-dressed people have come from!" I referred him to an old resident of three months' standing, to whom I had just been introduced, but he could throw no light upon the subject, and we left the matter of peopling Chicago in the same place where philosophers have put the question of the original peopling of the continent. I made several new acquaintances at this New Year's ball, and particularly with the officers of the garrison, from whose society I promise myself much pleasure during my stay. The geographical position of Chicago is so important, that I must give you a more minute description of the place in my next. Would that in folding this, I could enclose you half the warm wishes for your welfare which the season awakens in my bosom.

H.

THE AMERICAN ANNUAL REGISTER, for 1831-2: Brattleborough, (Vt.) Fessenden & Co. Boston.—We did intend to go into a somewhat detailed account of the merits of this most useful publication, in the hope of awakening attention to it commensurate with its real value, and that might in the event lead to a patronage more adequate than any it has yet received to the labor and talent with which it is prepared and conducted, and in the admirable manner as to typography, paper, &c., in which it is got up. But we have no space in our sheet—and sooth to say little leisure of our own—to devote to it at present such a notice as it should receive—as at some future day it shall receive from us.

Meantime, we make from the number before us two extracts, each of interest in its way. The first which is annexed, treats the policy of unduly hastening the settlement of the public lands, in a proper American spirit, and with a farreaching view of the benefits to distant generations of our own native citizens, for such a nursery for freemen.

There is no necessity of settling the West faster than the natural increase of the nation will do it; and the descendants of American citizens, who have been nurtured in the habits of devotion to the Union, and of respect to its laws, will furnish a better stock, than those who have been driven by improvidence or necessity from their native soil, to a country of whose institutions and laws, they are utterly ignorant, and to which they can consequently, bear no well founded attachment. The public domain now presents territory, where the surplus population of the Union can extend itself for centuries to come; and from its extent and fertility, it affords a strong security, that the American people will not be forced by density of population to that extremity of misery and crime, which is exhibited in Ireland and in the more populous counties of England. In extending themselves slowly over the continent, they will do it surely.

Time will be allowed for their political institutions to take root and to fasten themselves upon the attachments of the people. The federal government, known to them as first organizing them into political communities, and as protecting them from the inroads of savages and from intestine commotions, will be regarded with affection and confidence. They will become strongly bound to the Union by ties of early association, and the descendants of emigrants from the pleasant hills of New England, the verdant banks of the Hudson, and the sunny shores of the Chesapeake, when associated in new communities and states beyond the Rocky Mountains, will turn with feelings of respect and fraternal attachment towards the glorious scenes of that great political drama, that opened upon the field of

Lexington, and received its crowning triumph upon the plains of Yorktown. This brilliant prospect, however, cannot be realized through a policy, which would rapidly fill this vast territory with a population, driven by the improvidence of their fathers, or the cruelty of their governments from the shores of Europe. Ignorant, poor, discontented, and unfit to struggle with the difficulties of the wilderness, they would at best form a heterogeneous mass with all their early associations in favor of different institutions and other countries.

The second we give mainly to rebut a charge which we have seen made in the Globe, and in other party papers, that the facts of history purport to be given in this Register, are misrepresented through party bias. A more unfounded imputation was never uttered; for, though the Editor entertains, and in a proper way expresses, when needful, very positive political opinions, they in no instance interfere with facts or truth, in his manner of recording events.

The rejection of Mr. Van Buren by the Senate of the United States, is thus stated and commented upon:

After a full discussion on this nomination with closed doors, the Senate finally, by the casting vote of the Vice President, resolved not to confirm the nomination, yeas 23, nays 23. Mr. Van Buren was accordingly rejected; and after having presented his credentials at the Court of St. James, was compelled to return to the United States. As this was the first time that a minister had been compelled to return from his post, on account of the refusal of the Senate to concur in his appointment, great excitement was produced by this decision. The reasons set forth were subjected to severe criticism, and the rejection was by many imputed to party feeling and personal jealousy.

The friends of the Executive were urged to sustain him against an attack, which it was said was aimed at him. He was induced to come before the public and avow himself to be the author of the objectionable instructions; and his party was persuaded to bring forward Mr. Van Buren as a candidate for the Vice Presidency, as the only means of vindicating the honor of the President from a censure, which by his own confession ought to have been bestowed upon him. It was also urged, that if the Senate had been sincere in asserting, that the character of those instructions was a disqualification for a diplomatic office, Mr. McLane should have shared the same fate with Mr. Van Buren. If the instructing a minister to invite a foreign government to interfere in the domestic politics of the United States, furnished a sufficient reason why the author should not represent the republic abroad, surely the execution of those instructions ought to have excluded that minister from the cabinet councils, where measures to vindicate the honor and advance the interests of the country, are originated.

The lofty sense of national honor, which could tolerate the employment of the author of instructions so derogatory to the character of the country, would never have consented to the elevation of the ambassador by whom they were executed. This exalted feeling makes no compromise with expediency, and it regards with equal disdain, the author of a policy, which places the republic in the attitude of supplicating a foreign government, and the envoy who hesitates between the loss of his office and the presenting so obsequious a request at the foot of the British throne. No distinction could be made between them, which justified the different fates awarded to the ex-secretary and the minister, and the country was at a loss to comprehend the reason, why one was rejected and the other was confirmed.

In the contest that ensued, consequently, the opposition lost the advantage of the principle upon which it had rested the recall of Mr. Van Buren, and left the public to infer, that other motives had contributed to swell the vote against his appointment.

ANGEL'S SERIES OF COMMON SCHOOL BOOKS, FROM 1 TO 6.—Philadelphia: MARSHALL CLARK & Co. Providence, (R. I.) MARSHALL, BROWN & Co.—Mr. Oliver Angel, the author of these books, has twenty years' experience as a practical teacher, in one of the Providence district schools. His aim in preparing this series seems to have been, to carry on the learner from the first lessons in A B C, to a comprehension and appreciation of the finest composi-

tions in the language, by a regularly progressive system—each book presenting something more advanced and consequently more difficult than the preceding.

No. 1. sets forth the first steps—gives the alphabet, and a series of short words not exceeding two syllables.

No. 2 advances into larger words, longer sentences, and some short stories, care being taken in each to select the words required to be spelled, out of the reading lessons.

No. 3 arrives at figures and numbers, and the multiplication table, pursuing a progressive march as in other things.

Nos. 4, 5 and 6 are chiefly reading books, each a little more advanced than the other, until No. 6 becomes a large and well filled volume of extracts from approved writers. In each of these books questions are annexed to the extracts, in order that the fidelity with which scholars learn may be tested. The whole seem to us executed with sound judgment.

A portrait of the late Bishop Moore, of New York, intended for the forthcoming No. of the Protestant Episcopal Pulpit, has been sent to us. It is a fine engraving, and forcibly recalls the meek, spiritual, and venerable head of that truly Christian Bishop.

Music.—Major Jack Downing's March, composed and arranged for the Piano, by J. T. Norton, and published by Hewitt & Co., is the only piece of music we have recently to acknowledge.

FOREIGN INTELLIGENCE.

TWO MONTHS LATER FROM CANTON.—We have been favored with commercial advices from Canton to Oct. 22d. The Thos. Dickason was expected to sail for New York about Nov. 10th, but with few or no teas. U. S. Bank's exchange on London sold at 4s. 4d. per dollar. No sail of private bills. Ship Morrison, hence, arrived at Canton Oct. 17th.

In port, Nabob, Liberty, Eliza, Superior, Tartar, Cabot, Sumatra, Hope, Vancouver, Thos. Dickason, Col. Howard, Brighton, Panama, Omega, Martha, Neponset, Merchant, [Timor, Sabina, Hellespont, arrived Oct. 12th and 13th,] Morrison, and Italy.—Sailed, Oct. 15, brig John Gilpin, for Manila.—[Jour. of Com.]

[From the Journal of Commerce.]

LATEST FROM MEXICO.—By the ship Mexican, Capt. Davis, we have Vera Cruz papers to February 3d inclusive. Not the least important subject which at present occupies the attention of the Mexicans, relates to ecclesiastics and the church. One article is written to show that ecclesiastics ought to take no part in temporal affairs; several others are occupied in commenting very freely upon the conduct of the Pope towards Don Pedro, and his party; another is headed "The Jesuit religion, the cause of immense evils to the State;" another is taken up in discussing the nature and origin of ecclesiastical property; another in favor of toleration, &c.

Great complaints are made of the depredations of robbers, in various parts of the country. A Mexican paper of Jan. 24th says, "The stage was robbed twice last week, and once this week."

MEXICO, Jan. 27.—The Mexican capital is so plagued with robbers, that the peaceable inhabitants do not find themselves safe even in the most frequent places.

It is stated that Col. Austin had been arrested in Saltillo.

Gen. Pedraza has been appointed a member of the General Direction of public instruction.

LATER FROM EUROPE.—By the ship Henri IV. Captain Castoff, we have Paris dates of the 29th, Havre of the 30th, and London of the 27th.

In Portugal, the Queen's party have gained another victory, which promises important results.

The dates from Madrid are only two days later than before received by an arrival at Boston. The change of Ministry is confirmed, and it is also announced that orders have been issued for the convocation of the Cortes.

LONDON, JAN. 27.—Brilliant Victory over the Mi-

guelites.—"We have received important news from Portugal. Gen. Saldanha has entered Leiria, capturing the whole of Miguel's forces which were in that town. The news was brought to London this morning by an officer who landed at Falmouth, and immediately posted to London. The following is a private letter with which we have been favored:

"LISBON, JAN. 18.—I transmit you here the Chronica of yesterday and this day, by which you will see the result of the first movement of the Conde de Saldanha's division. Those who are intimately acquainted with the situation of Leiria will know that by the next packet you will hear that our army is in Coimbra, the third city of the kingdom; and his having effected a combination with the army in Oporto will speedily leave an unbroken communication between that city and Lisbon. The Miguelite force in Santarem will be obliged to retire to the southward, pursued by the 11,000 men whom we have in observation at that place; and I feel persuaded you will very shortly learn that they are completely upon the frontier of Spain. Here all is enthusiasm and confidence, and the Government feels itself more secure than ever." This is Gen. Saldanha's report to the Minister of War, contained in the Chronica of the 17th and dated Leira, January 15:

"Army of Operations.—Most Illustrious and Excellent Senhor,—His Imperial Majesty's orders are executed. Leiria is in our possession. Of the garrison, which was composed of 1,476, and 46 cavalry, only three officers and six cavalry soldiers were able to escape, taking the road to Coimbra. The Governor, Brigadier Jose de Mello Pita Osorio, two superior officers, the Capt. Mor, and many other prisoners are in our hands, as well as four pieces of artillery, and the Ensign of the regiment of militia of Leiria. The Corregidor, a perverse man, was killed; in a word, the overthrow could not be more complete. To-morrow I shall have the honor of sending to your Excellency the details of this day, and of the movements which preceded it. A corporal of Oladores, No. 5, wounded; this is all our loss! The affair of Aleacer is well avenged. God preserve your Excellency.

(Signed) "CONDE DE SALDANHA."

"Postscript—All the enemy's baggage fell into our power." Gen. Saldanha, though intending to move towards Coimbra, remained at Leiria on the 16th, and on that day sent a despatch to the Government, giving a full account of his proceedings from the time of leaving the army before Santarem on the 12th, and details of his success at Leiria. The Miguelites, it appears, gave up their strong position in the Castle, apprehensive of having their retreat cut off. As they were moving away, they were attacked by the cavalry under the orders of Colonel Bacon, and completely routed. The result is stated in the despatch already quoted. Beside the Governor, Col. Don Jose de Mello Freire Pita Osorio, Saldanha has captured a considerable number of officers and soldiers. The news from Santarem is also of importance. By the Chronica of the 18th, it appears that on the 15th, the day of the last accounts, the cholera morbus was raging violently at Santarem, and that provisions and forage were getting so scarce, that since the 16th more than twenty have died per day. The Pedroites have gained an advantage also at Marvao; and, according to all these accounts, the Miguelites cannot possibly long hold out. Even Miguel himself is said to be very ill, and has of late not allowed himself to be seen.—[Courier.]

SPAIN.

Convocation of the Cortes.—The Indicateur of Bordeaux of January 25th says: "We yesterday learnt officially by a courier extraordinary, that the Spanish Government has issued two Ordinances for the immediate convocation of the Cortes per estamentos."

Extract of a letter from Madrid, dated the 17th instant: "It is certain that the Great Powers have complained to England and France of the late excursions of the Spanish troops into Portugal, and that the British Cabinet has delivered to ours a note protesting against their being renewed under any pretence, and declaring that his Britannic Majesty would consider any future violation of the Portuguese territory by a Spanish army as an act of aggression against Great Britain, in consequence of the union which exists between that nation and Portugal, founded on ancient treaties. This had an ill effect at the court of Spain." No intelligence had been received from Madrid subsequent to the 17th. At that time the population of the capital was full of enthusiasm at the accession of M. Martinez de la Rota to the ministry.

The Sentinelle des Pyrenees of Bayonne has the

following, of the 17th inst. from Aldudes;—"It is said that the port of Guetetaria is in the power of the Carlists, and that two British vessels have landed 10,000 muskets, and equipments for 10,000 men.

Colonel Bayona, who took refuge in France, having learnt that the Carlists had retired, immediately returned to the ironworks of Orbaiceta, of which he is director. The Spanish families, who, for some days past, have lived in huts on the French frontier, will doubtless return to their homes without delay."

FRANCE.

M. Laffitte's Hotel, in the Rue Laffitte, was put up to auction yesterday at an upset price of 978,000 fr., but there being no bidder the sale was postponed to an indefinite period.

PARIS, JAN. 28.—The Budget Committee have signified their dissent from the number of men laid in the estimate of the Minister of War, for 1833, Marshal Soult proposed a conference with them, and the Committee assembled for that purpose on Sunday, at the Palace of the Chamber of Deputies. In the estimates the effective of the army was fixed at 374,000 men, but the Marshal consented to reduce it to 310,000, the same number as voted for 1834. Some of the members of the Committee were for reducing it to 294,000 men, and others for fixing it at 310,000. The Minister declared that the honor and interest of the country did not allow him to descend below 310,000 men, and that if this number were refused Ministers would resign in the mass.

Postscript to a letter from the French Admiral Baron Hugon, commanding the French squadron on the Levant, by which he announces to the Minister of the Marine the loss of the French ship of the line *La Superbe*.

"P. S. I opened my letter to announce that the *Cornelia* has just been despatched. I have also learnt that the American ship the *United States*, Commodore Patterson, which left the Bay of Smyrna a few hours before the *Superbe*, after having lost some of her masts, had her sails torn away, and her boats carried off, and being nearly embayed off the coast of Andros, and expecting every moment to be lost, a sudden gleam of light enabled her to discover the narrow passage between Tina and Andros, she was enabled to get through it and gain the harbor of Milo."

The *Iphigenie* frigate, bearing the flag of Rear-Admiral Baron Hugon, and the *Duquesne*, of the line, Capt. Casey, arrived at Toulon on the 26th inst. from Nauplia, bringing with them 446 men of the crew of the *Superbe*, (wrecked)

FOREIGN VARIETIES.

THE ARTS IN AUSTRIA.—The care taken by the Austrian Government to prevent the people from mixing themselves up with politics, has the natural consequence of driving them to the study of the arts and sciences. Thus there are few countries in which we find so many savans and amateur artists as in Austria. Every person in comfortable circumstances gives himself up to the study of some favorite branch of art or science, to which he consecrates all his leisure hours; and what lover of such pursuits has not admired the beautiful galleries of pictures of the Princes Esterhazy and Liechtenstein, as well as the splendid libraries of Count Czarnin, Lamberg, &c., and the treasures of M. de Hammer, who possesses a greater number of Oriental manuscripts than are to be found at Constantinople or the College of Ispahan? M. Tröstl, directed by another kind of love for Eastern curiosities, has made a collection of all the varieties of pearls which are found in the fisheries of the Persian Gulf, at Ceylon, or in the diverse harbors of the Indian Ocean; and M. Pehl, a collection of Brazilian flowers not to be equalled in Europe. Collections of herbs, medals, minerals, libraries full of rare books, and galleries of pictures, are found in every town of the least consequence in the Austrian empire. At Milan, the Chevalier Iitta Blumi exhibits his colossal map of Italy; and at Pesth, M. Janowich does the honors of his rich collection of Hungarian antiquities. It will appear, therefore, that it is not only in the capital that precious and varied treasures are to be seen. Vienna, however, distinguishes herself above all the towns of Austria for her cultivation of music.

A stranger visiting Vienna would think that on music actually depended the existence of the people, for music of all descriptions strikes the ear in every direction. To enumerate all the Unions and Societies, public and private, instituted for the propagation of this science, would be perfectly impossible. The chief public institutions is the Imperial Music School, at which pupils may become members gratuitously. The Society of Amateurs, established

about twenty years, also has had a great influence on the development of the science of music in Austria. The archives of this Society possess more than 800 concerted pieces, and the library 1240 works on the theory and practice of music; besides a fine gallery of portraits of the most celebrated composers, a large collection of autographs, and a museum of rare, ancient and modern musical instruments. The Royal Library is truly one of the richest depots of ancient and modern music. It consists of sixteen large apartments, containing 4000 musical works, which number 6500 volumes. Amongst the private collections, that of Count de Fuchs is most worthy of notice, consisting of upwards of 1000 concerted pieces and M. Alexander Fuchs, brother of the former, has a collection of autographs of the most celebrated musical composers, amounting to 500. To the lovers of a cremona the collection of instruments of M. Francis Rychaczek would offer a great treat; it consists of upwards of 200 violins, violincellos, and double basses.

The Whigs and the Church.—We have, hitherto, in every question of politics in which we have presumed to say a word, endeavored to appear at once open and honest. Not to be open is, indeed, to be dishonest. But we have also, when stating our opinions, stated them with due reference to the judgments of our superiors; and we shall, as respects this important question, do as we have done on former occasions.

Our opinion here is not wavering, though it may be wrong. It is decided; we are sorry to hear of those proceedings at Gateshead, the object of which, as we understand the reports, is to make a first attack upon the House of Lords at a point where it is by far the least vulnerable. We are not amongst those who like to see the church supported by such "pillars" only as are set up by the solicitation of a king's minister or the intrigues of a royal mistress. But, supposing the election of bishops to be proper, we have no hesitation to declare that in this country, which has a state established church, the bishops have at least as much claim to respect and confidence, that they are, at the very least, as members of the Upper House, as necessary to the state as the other lords. If the saying, "*Ordo Episcoporum robur reipublice*," be found to be not true, the whole of the *ordo* *Liacorum*, with which the bishops are associated in the House of Lords, had better quickly prepare themselves with proofs to show what strength they afford to the nation.—"Bishops," it has been said, "should not take part in matters of state." Why not, since the department over which they preside is a part of the state? Much better, it seems to us, that both they and their doings should appear in the House of Lords, than that, being hidden by obscurity, they should be perhaps more under the beck of corruption than a seat in the House can make them.

Probably we are letting out all we think at a moment when some who would disagree with us have views undeclared. If so, any such advantage against us is unfair. There are some who have, indeed, been pretty open in their avowals. But there are a great many who would do their best towards effecting the whole of that, the greater part of which they profess not to aim at. What then are the propositions to be discussed?—what is the end in view, and the whole of it? To undermine the church in general; to remove only its main supports; to put an end to bishops, merely to make a hit at the hereditary lords through the bishops, or to abolish the joint bench, spiritual and temporal, altogether.

If the church is now in danger, the danger is owing to the wisdom of the whigs; the whigs, who have been pound-wise for themselves and penny-wise for the people. What a faction has this been! What a new trait gained to the character of dishonesty, revealing by the delusion of confidence, when those who became the pilots in the storm turn into pirates over a wreck of their own making, and, clinging on to the last, surviving all they had taken in charge, are half cocked with a surfeit of plundering the sunk before their own noses are under water!—[Cobbett's Magazine.]

National Education in France.—The Bill regulating Primary Instructions in France, termed the *Projet de Loi*, introduced to the Chamber of Deputies by M. Guizot on the 2d of January last, and passed into a law on the 28th of June, provides for the establishment of schools of three descriptions. Every commune or parish is bound to provide, either by itself or conjointly with one or more neighboring parishes, one primary school of the lowest order. In this school moral and religious instruction is to be given to the children, reading, writing, the principles

of the French language, ciphering, and an acquaintance with the authorized system of weights and measures are to be taught. The master of this establishment is to be furnished by the parish with a suitable house and fixed salary, the minimum of which is to be 200 francs, 51. 6s. 6d., and in addition he is to receive from such of the parents of the children as can afford it, fees or quarter pence. The fees are to be exacted, not by the master himself, but by a public officer on his account. County towns and parishes having a population exceeding 6,000 souls, are bound, individually or conjointly, to maintain a school of the second class, in which, in addition to the instruction given in the first or lower order of schools, the children are taught the elements of geometry, with its ordinary applications, particularly to linear drawing and land measuring; the elements of the physical sciences and of natural history, as they are applicable to the common uses of life; singing; the elements of history and geography, and especially the history and geography of France.—The wishes of the fathers must, however, be consulted and complied with as to their children's participation in the religious instruction given. As this second class of schools are designed for the children of parents above want, there is no gratuitous admission except in the case of extraordinary talents in the poor scholar of the lower species, who receives the advantage of a higher education as a reward; but, in order that the rate of payment may be very moderate, the master is to receive a fixed salary, of which the minimum is 400 francs, (161. 13s.) along with the fees. In this class of schools, as well as the former, the fixed salary of the master is to be paid wholly by the parish, if possible, or, if not, partly by the department or county, and the state itself is to come in aid as a *dernier resort*. The third class of schools, styled the *Normal*, are for the training of masters, and of these there is to be one in every department.

New Gigantic Telescope.—A great work has just been completed in all its essential parts, in Urzschneider's manufactory of optical instruments at Munich. It is a gigantic telescope, on Fraunhofer's principle, of 15 Paris feet focal distance, and an aperture of 10 1/2 inches. It surpasses in size and power the largest telescopes made in the lifetime of the illustrious Fraunhofer. It has been tried with the greatest strictness by the professors of astronomy in the University of Munich, and declared to be a perfect masterpiece. The clearness and distinctness of a heavenly body seen through it, is, to that of the Dorpat telescope made by Fraunhofer, of thirteen feet focal distance and nine inches aperture, as 21 to 18, and the intensity of the light as 136 to 100. It magnifies far above 1000 times, and the ordinary expression of bringing an object nearer may be literally applied: thus, when Saturn at its smallest distance from the earth, is 165,000,000 of geographical miles distant, it seems, when magnified 816 times by this telescope, to have approached to the distance of 192,000 geographical miles; and the moon, at her smallest distance from the earth, seems, when magnified in the same manner, to have approached within 68 geographical miles, which is but little more than the distance, in a direct line, from Athens to Constantinople.

The number of State Pensioners in France, on January 1, 1833, was 162,175, who are thus divided: peers, 128, receiving 1,564,000 francs; civil pensioners, 2593; receiving 1,733,400 fr.; pensioners of July, 1408, receiving 613,700 fr.; military pensioners, 127,011, receiving 46,603,221 fr.; ecclesiastical pensioners, 28,186, receiving 4,662,469 fr.; *donataires*, 2,952, receiving 1,480,084 fr. Total, 162,175 pensioners, receiving 56,735,874 fr.

MAXIM.—When you have made a good bargain be sure you clench it with a deposit before the other party has time to retract. Often when a man may be bargaining with you in jest, if the advantage be on your side, you may pretend you thought him in earnest; and so sometimes, make a very good piece of business of it. It will not only be of good to you, but it will benefit him by teaching him never to jest about business. I will tell you a story:—A man that I am very well acquainted with, and who was not always so well to do in the world as he is now—I do not say it was myself, but it was a Scotsman who had risen from a very low beginning. His outward dress did not always tally with the lining of his pocket; indeed, the pocket when he went to market was but ill held up by the rags which it was sewed to; to look at him you would not have thought him worth a plack. Well, one morning, a cargo of hides coming into port, he went and asked the owner what he would sell his whole cargo for?—Looking at him from head to foot, the owner could

hardly refrain from laughing outright. "My good friend," said he, "I think it matters little to you the price of the cargo: a single hide, I should imagine, would exhaust your whole purse." "When folk come to buy," said our Scotsman, "they expect to be treated with civility. Will you answer me a plain question? What's the price of the whole cargo of hides on board your ship Prosperity, now in harbor?" The shipowner still thought the man was daft or joking, and he said, "What will you give me for the cargo, ready money down upon the table?" "Gude sir, it's not for me to put a price upon your goods; tell me what is the lowest price you'll take?" The owner still carrying on the joke, (as he thought,) named a price not half the actual value. The merchant, of frugal appearance, put his hand in his pocket, took out a shilling, and clapped it into the hands of the owner, crying aloud, "A bargain! my friend, and before these witnesses," turning to those who had been amused with the conversation that had passed. Viewing the man still in the same light, and never suspecting that he had to do with a man of money, the considerate owner proffered back the shilling to the man of rags, saying, "Here my good man, though I have been cutting some severe jokes upon him, I would not wish to rob you of a shilling; judging from appearances you have very few to spare." The buyer advanced with a firm step, and looking him in the face, said, "Sir, judging from appearances, it may be so; but I can tell you I did as give ye that shilling that it might be returned in the character of an almshouse: that shilling is the arles o' my purchase of the whole of your cargo; tell me, therefore, when you will deliver it, and receive your money! or, said, he (taking out of his pouch the foot of an old stocking, well darned and patched, heavy with gold and crumpled with bank notes, "if any substantial person will be responsible for the delivery, I'll pay ye the siller down on the table this minute." Every attempt at explanation or accommodation was in vain; and at last the owner was compelled to give up his cargo of hides at less than half their value; and he received the money agreed upon forthwith. As it was the only cargo that had arrived in the market for some time, the ragged man of money sold his hides at almost his own demand; and he aye said it was the best bargain he ever made in his life. A ragged coat, ye see, has its advantages as well as a good one; but mind, never joke about business.—[Glasgow Courier.]

SUMMARY.

Extract of a letter from a gentleman at Prairie du Chien, Upper Mississippi, Feb. 1.

I wrote to — from Mineral Point, since which I have heard that the Sacs and Foxes have killed 16 Winnebagoes, and my friend and gossip Whirling Thunder is about to come down upon the Black Hawk people with 700 warriors at his back. He swears he will exterminate Black Hawk's band. The fighting, if any takes place, will be far in the rear of me I may see some of the fun, however, when I return.

[From the Philadelphia papers of yesterday morning.]

DREADFUL DISASTER—LOSS OF LIFE.—The most serious disaster that has ever occurred on the Delaware, took place yesterday afternoon. The steamboat William Penn, Capt. Jeffries, on her way from New Castle to this city, took fire just before she reached the Point House, and was run ashore immediately above the Point. There were upwards of one hundred and fifty passengers on board at the time, and the awful scene that ensued can be better imagined than described. It is impossible to state at this time the number of persons who perished, as there are various contradictory rumours in circulation. Three dead bodies, two male and one female, reached this city last evening. Every exertion was made to restore life, but in vain. The names of the sufferers are, Colonel Joseph S. Porter, of this city—the Rev. John Mitchell Moore, of Lewistown, Del., and an unknown female. It is stated that the latter sprang into the water from the stern of the boat, and Mr. Moore immediately after her—that when taken up, both were alive, but they died from fright, suffering, and cold. One individual, a passenger, stated to us that he observed another female spring into the water and sink before assistance could be rendered.

The conduct of the officers of the boat, from the moment the accident occurred, is represented to have been of the most praiseworthy character. The place where the boat grounded is within about fifty

yards of the Banks of the Delaware, on the Pennsylvania side, and the passengers, male and female, were compelled to wade some distance in mud and water, to the depth of several feet. Of course they were wet to the skin, and their cloths disfigured with mud. Several lost their hats, others their shoes, &c. Most of the baggage was saved, also the Southern Mail.

As soon as the fire was discovered, a number of small boats hastened to the assistance of the sufferers—also, the South street steamboat, one of the Market street boats, and the Burlington from Chesnut street wharf. The passengers, for the most part, were brought up in these vessels. Thousands of our citizens lined the wharves from the moment the fire was discovered, untill long after nightfall.—Great anxiety was felt by those who expected friends and relatives, and hundreds of persons rushed to catch a glance at the dead bodies, fearful that some one dear to them had passed into the valley of death.—The fire is said to have originated in the wheel house. When first discovered, an effort was made to check it, but it was soon found impossible, and to escape from the devouring element became the object of all.

The boat continued burning for several hours, and presented a beautiful but a melancholy spectacle. About half past six o'clock she floated from the shore, and came up the river, still burning, as far as the island opposite the city, where she again went ashore, and was burnt to the water's edge. We regret to learn that the loss sustained will be about \$70,000.

Such are the leading particulars of this melancholy catastrophe, the first accident accompanied with loss of lives that has occurred on the Delaware since the introduction of steamboat navigation.

THE STEAMBOAT WILLIAM PENN.—Another of the passengers in this boat has perished, Mr. Walter W. Buckley, of Connecticut. He died from the effects of cold and exposure.

The body of the female has not yet been recognized. A ring upon her finger has the following words: "Let love abide forever. J. B."

Further search has led to the conclusion, that two large portmanteaus, containing the letters from Baltimore city and the west, embracing as is supposed, Cincinnati, Ohio State (south) Illinois, Indiana, Kentucky, West Tennessee, Maryland Western Shore, and Washington, Brownsville, Union Town, and New Geneva, Pa. and for distribution, have been entirely consumed.

A newly discovered vegetable, called the Oxalis Crenata, a rival to the potato, has lately been imported from Chili and cultivated with great success in Suffolk (England.) The flavor of the root is decidedly superior to that of the common potato, and it is equally prolific.

The steamboat Wm. Gibbons, which left New York on Saturday, at 4 P. M. was seen on Monday, at 6 A. M. 40 miles north of Hatteras—wind fresh from the northward.

More and More.—The New Orleans Bee of Feb. 17th, announces the arrival of the schr. Creole from Tampico, with about FOUR HUNDRED THOUSAND DOLLARS IN SPECIE.

A curious blunder occurred in the business of the Common Council on Wednesday evening. Isaac Auld, was appointed weigh-master vice Albert Cox deceased, and yet Mr. Cox is in good health, and one of the most extensive weighers in this city.

It is stated that the Fire Insurance Offices in this City have decided not to insure any steamboat unless provided with a force pump or engine and hose, sufficient to throw water to any part of the boat, in case of fire. Such means of protection, if on board the William Penn, might have saved the destruction of the boat and lives of those who perished.

Disaster.—The packet ship Mississippi, Captain Robinson, from New Orleans, for this port, went ashore on Wednesday afternoon, at six o'clock, in a thick fog, on Brigantine Shoals, twenty miles south of Barnegat knocked off her false keel and thumped considerably. She has on board a full cargo and \$100,000 in specie for the United States Bank. The M. is a new and superb ship. She is insured in Boston, and the cargo in New York. The passengers left her soon after she struck in a schooner which was passing, and arrived in the city yesterday afternoon. A steamboat was immediately despatched and several lighters in the hope of saving the cargo, and if possible the ship.

APPOINTMENTS BY THE PRESIDENT.

By and with the advice and consent of the Senate.
David Hodge, Register of the Land Office at Steubenville, Ohio.

James C. Sloo, Register of the Land Office at Shawneetown, Illinois.

Charles Prentiss, Register of the Land Office at Vandalia, Illinois.

William L. May, Register of the Land Office at Springfield, Illinois.

Robert S. Garnett, Collector and Inspector at Tappanhook, Va.

Henry S. Whitely, Collector and Inspector at Wilmington, Del.

John W. Smith, Surveyor and Inspector at Portland, Maine.

Levi Fagan, Collector and Inspector at Plymouth, N. C.

Archibald W. Hyde, Collector and Inspector at Alburg, Vt.

William Beach, Collector at Gloucester, Mass.

Mahlon D. Canfield, Collector and Inspector at Great Egg Harbor, N. J.

Martin T. Morton, Collector and Inspector at Nantucket, Mass.

The above are all re-appointments.—[Globe.]

Edward Livingston, to be Envoy Extraordinary and Minister Plenipotentiary to the Court of His Majesty the King of the French.

Thomas Pennant Barton, to be Secretary of the Legation of the United States at Paris.

Arthur Middleton, Jr. to be Secretary of the Legation of the United States at Madrid, in the place of Charles S. Walsh, removed.

Joseph S. Cabot, to be Commissioner under the law to carry into effect the Convention between the United States and His Majesty the King of the Two Sicilies, concluded on the 14th of October, 1832, in the place of Peter V. Daniel, resigned.

Romulus M. Saunders, to be Commissioner under the law to carry into effect the Convention between the United States and His Majesty the King of the French, concluded on the 4th of July, 1831, in the place of Thomas H. Williams, resigned.

John W. Overton, to be Clerk to the Commission under the law to carry into effect the Convention aforesaid, between the United States and His Majesty the King of the Two Sicilies, in the place of George Breathitt, deceased.

James Collinsworth, to be Attorney of the United States for the Western District of Tennessee. Re-appointed.

John Patterson, to be Marshal of the United States for the District of Ohio. Re-appointed.—[Globe.]

Appointments by the Governor and Senate, February 26, 1834.

ALBANY—William Weaver, inspector and admeasurer of wood and timber; also, measurer of stone. John W. Stilwell and Philo Booth, inspectors of beef and pork. Harmanus S. Van Ingen, Theodore Olcott, Henry Bartow, Thomas W. Olcott, Philip S. Van Ingen and Frederick H. Pepoon, notaries public.

BROOME—George T. Ray, auctioneer.

SCHENECTADY—Roswell Perry and Wm. Freeman auctioneers. Cornelius G. Palmer, Wm. Strong, Wm. Meeker, Robert Barker, Jacob Swits, Joshua D. Harman, Abraham Van Ingen, Stephen A. Daggett, James M. Bouck and Henry Fuller, commissioners of deeds.

CHENANGO—Walter M. Koney, notary public.

OSWEGO—John Reynolds, judge of county courts. Lewis Parker and I. Foot Turner, auctioneers.—Wm. F. Allen, examiner in chancery. Avery Skinner, judge of county courts.

TIOGA—Silvester Sexton and Walker Canfield, inspectors of lumber.

CAYUGA—Ezekiel Williams, Bradley Tuttle, Ulysses F. Doubleday, Thomas Y. How, jr. and John Garrow, inspectors of the State Prison at Auburn.

CATTARAUGUS—Albert C. Burge, supreme court commissioner. Moses Beecher, surrogate.

DUTCHESS—Robert S. Livingston, judge of county courts. David V. N. Radcliff, supreme court commissioner. James Grant, jr. and Alexander Forbes, notaries public. Joseph Gunn, Jacob Barringer, Stephen Jennings and Samuel Gunn, inspectors of beef and pork. Lemuel Conklin, inspector of flour and meal. John Lewis, James Montfort, John Ward, jr. and Henry Gale, auctioneers. John Brush, examiner in chancery.

RICHMOND—Jacob Tyson, first Judge; Daniel Mersecau and Samuel Barton, judges of county courts. Richard Crocheron, surrogate. Robert M. Hazard and Wm. S. Root, notaries public. Philip Gibson, Abraham Autin, Wm. Shea, and Andrew B. Decker, auctioneers.

CLAIMS ON FRANCE.—Notice has been given by the Board of Commissioners under the Convention with France, that all claimants, whose memorials are not yet filed, or are not received in consequence of some defect, must file them with the Secretary, on or before the first Monday in May next; after which period no new one will be received, unless good cause be shown why it was not previously filed. These are required to be prepared and verified according to the former regulations of the Board, and are to be set down for examination, at the expiration of the month from the date of their reception. So much of the previous orders, as directs that no document shall be received by way of proof or otherwise after the memorial is set down for examination, is suspended until the first Monday in May, to which time the Board, on the 21st instant, voted to adjourn, with the intention of then proceeding to the examination of the several memorials.—[Daily Adv.]

MOBILE, Feb. 14.—There were no papers from the East today. We have now eight paper mails due from New York, and six from Washington.

SHIPWRECK.—The schooner *Pomona* from Nassau, at Savannah, on the 19th February, reports that brig *Bacmum*, P. Sheffield, master, from Charleston, S. C. bound to New-Orleans was wrecked on Abaco, when only 56 hours from Charleston. All the crew and passengers, including 45 slaves, was saved. The latter on landing were liberated. The following letter is from a passenger—

"Nassau, Feb. 12, 1834.

"From the time we left Charleston, we had uncommon fine weather, and was under the impression that we would certainly reach New-Orleans in a week at least, but on Monday night, precisely at twelve o'clock, the vessel struck on *Abaco Reef*, and filled in twenty minutes afterwards; the masts were immediately cut away to lighten her, but all in vain; she began to thump so violently that the Captain ordered all hands to secure themselves, for he said she would not hold together another hour. Young Smith and myself lashed ourselves to the mainmast, as well as the rest of passengers, amounting in all to sixty-nine souls. After being in this situation a few hours, the vessel went down bow foremost, and only a few feet of her stern remained above the surface of the water. We then began to make preparations to secure our lives a little longer, for death appeared to us inevitable. In attempting to get the small boat, which was the only one we had, on the lee side she filled twice, and it was with the utmost difficulty she could be kept free. Eight of us left the wreck in her before the dawn of day, to seek for land. As soon as daylight came we discovered land, about five miles distant. It proved to be Fish Key, a small island inhabited only by a single family of fishermen. On this desolate place, we remained four days, subsisting on what we could catch, having scarcely enough to keep us alive. We were then carried by the fishermen to Green Turtle Key, where we remained a day and a night, and lastly we were brought to this place completely destitute."

Mr. Auduson.—The following whimsical letter written by this enthusiastic bird hunter to a gentleman in Boston, is from the Transcript.

"When we left New York, I expected to be obliged to sail instant for Old England. We passed through Philadelphia, working there like horses—my good wife and I—packing birds, 3500 skins, for Europe. Had to collect money due me there—and had other trouble. Pushed for Baltimore. Had to shave every day. Ran up and down both sides of the streets. Procured four new subscribers—collected some cash—and off to Washington city to see the Grandees. Received grandly. No subscribers—no cash. Heavy bill at the Hotel—Town dull—country shockingly poor. Cleared at the Custom House, for Baltimore again—took to the water. Had a storm. Not lost—but tremendously scared. Saw Norfolk by night, and James River by day. Reached Richmond. Pleasant reception. Made and received many calls. Handful of promises, but not a jot done for us. Crops short—produce low. Huzzas for the South! Coach to Petersburg. Only fourteen passengers—four harps, three violoncellos, one bass, and sundry tambourines. Have you travelled the Petersburg Rail Road? No. Well don't. Like to have been starved and roasted to boot—travelled hard, and fared harder. Coaches full—horrid brutes—eat like pigs, and swear like devils. Reached Fayetteville. Good

boiled eggs—excellent substitute for stones, in this country. Got to Columbia—saw the College and President Cooper. Hired a private carriage to Charleston. The horse laid down on the road. Hired another at seven dollars per diem, and three more for his blades. Rode slow—saw nothing strange, and, thank God, at last reached Charleston, and the hospitable mansion of our worthy friends, the Rev. J. B.'s family. Have worked hard ever since. Have thought of writing to you one good hundred times, but whenever I was about to make a pen, my brushes stared me in the face, and not only so, but actually said to me, (for my brushes speak) "Finish those Birds of America before you write"—and so I did.

"My plans have been frustrated. I feel I shall have to go to England, instead of the Southern Swamps and Western Prairies. If it be determined that I go to Europe, you will see me in Boston in less than a month after you receive this. If not, I shall write to you. I have been so constant at my great pine table, that I have been out shooting only twice—and once only to dine out. Evening parties you knew I abhor—unless I am invited to dance! My good friend has been copying my Biography for publication. * * * We are well. * * * Thank you for Smith on Fish; but I prefer Grouse to Fish—Chickens to Grouse—and Blue-winged Teal to Canvas-Back Ducks. * * * Yours, truly, J. J. A.

There is a degree of humor and arch satire in the annexed article—which has long been waiting a place—that few alone seem master of, now-a-days.

The fastidiousness which renders the most noble Marquess of Snowden so reluctant to be seen emerging from an Omnibus, under any circumstances, is not entirely without a parallel among some of our most *recherchés* personages.

LIFE IN AN OMNIBUS.—Lord Snowden has just broken a shaft of his cabriolet, on a wet day, upon Barnes Common; an omnibus rattles up, and the Tiger, no house nor aid being near, persuades his lofty master, the destined Governor General of India, to 'get in.'

'The Marquess stepped in, and the conductor gave the word, 'all right,' but this was done so soon after the admission of his Lordship into the vehicle, and he was so long picking out a clean place to sit down upon, that the jerk threw his Lordship forward into the lap of the 'attest woman that ever was seen out on a caravan at a fair, who, unfortunately, was carrying a jar of pickled onions on her knee, which was upset by the Marquess's tumble, and in its fall saturated the front of his Lordship's waistcoat and stock with its fragrant juice.'

'The dirty dandy in the corner, as soon as he saw the voluntary contortions of poor Lord Snowden's countenance, as the huge thing bumped up and down, and twisted first one way and then another, began to affect a similar distaste for the conveyance; and to mark his sympathy with the new arrival, forthwith bumped himself up close to him. He looked at the Governor-General Bahander for a moment or two, and then pulling out a sort of whitey-brown paper funnel, which did duty for a snuff box, offered it to the Marquess.'

'After a short delay, during which several aristocratic carriages rolled by—at which periods the Marquess adopted the celebrated system of *ostrichism*, and hid his head—the omnibus rattled on towards town. At Waltham-green, two tall scraggy girls from a boarding-school,

Sickly, smiling, gay, young, and awkward, were poked in. A gentleman with very red mustachios, was picked up at the Queen's Elm gate; and a poulterer's boy, with a couple of skinned rabbits in a tray, was added to the party at the corner of Sloane-street, the said rabbits on their way back to a poulterer's in Duke-street, St. James's, because they were not fresh.

'The Marquess made a thousand well-bred apologies, and was got up upon his legs by the exertions of the fat woman, whose struggles to rescue herself from the imposing weight of nobility, materially assisted the efforts of a good-natured dirty little man in the corner, and a thin spare woman, who was carrying a bantam-cock and three hens in a basket to London, having on her other hand a large faced child, with great blue eyes, and a cold in its head. It wore a brown skin cap, with a gold band round it, while a green and white net comforter was twisted round its chin and body; its dress, generally, bearing very strong evidence that the dear little thing was an extremely bad traveller.

'Near the door, and over whose shins the Marquess first tumbled upon getting in, was placed a stout, blue-aproned market-gardener; and opposite to him, a smartish looking man, with a Mosaic gold chain round his neck, and a bunch of oily curls coming out from his hat just over his hair—he was the dandy of the party.'

'Off went the omnibus—rattle went all the windows—slap went the weather boards, bang went the axle-trees; and away went the whole concern at a rate and with a noise, of which the Marquess till that moment had but a very faint conception.

'At the top of St. James's street the caravan stopped. The day had cleared up; the pavement was dry. The King was in town; there were many people about. Lord Snowden just peeped through the windows, and saw groups collected—men he knew. Here it was clear he could not get out—whither should he go? how far—what place was safe? At length he resolved upon going the whole journey to the Bank, so that he might emerge in the city, and then enveloping himself in a hackney-coach, reach the habitable part of the town, without fear of discovery.

'Any body for White Oss Cellar?' said the man on the steps. Out went the dirty dandy, the man with the apron, and the boy with the rabbits. But their places were instantly supplied by a portly gentleman lugging in a small sized green garden-engine with a fan spout, and three fishing-rods, which he had just bought at the corner of Albemarle street, and a fond mother who had provided herself with a heap of toys for her six children.

'Still the Marquess kept peering out of his prison—nobody saw him—and it was pleasant to peep through the loop-holes thus unobserved. In a few minutes all was right, but the pavement in Piccadilly was up; it was necessary, therefore, that the huge machine should go down St. James's street; and so it did; but short was its progress in that line of march—all the bumpings and thumpings which its rapid course in the earlier part of its journey had excited now were to be compensated for. The driver smacked his whip, the horses obeyed the sound; when bang went something, and in an instant the whole fabric came down with a crash like thunder, exactly in front of White's.

'The shrieks of the women, the cries of the men, the noise of the fall, all combined to attract a thousand spectators. Fifty heads were out of Crockford's Coffee-room; all the guardsmen rushed into the balcony; and in the bow-window of White's itself, which was instantly thrown up, were heard the well-known voices of the leaders of the clique, in a sort of war-hoop, which, like the whistle of Rhoderick Dhu, roused the whole clan to observe the dreadful *denouement*.

'In detail were the passengers extricated. The dear little boarding-school girls jumped out first: the fat man with his garden-engine, stuck in the door-way, and was only ejected by the ponderosity of the still fatter woman, with what she called her 'union jar,' clasped like a lovely baby to her bosom; the lady with the toys was trampled under foot; the sick child was jammed under the dirty man in the corner, and the thin woman who took care of it, getting anxious about its fate, unwillingly abandoned the poultry; and when the most noble the Marquess of Snowden, K. G. and Governor-General of India, emerged, amidst the cries of 'take care of the old gentleman,' he came out without his hat, with a fine bantam cock perched upon his head, and a couple of fuzzy-legged hens roosting upon his shoulders.'—[Hook's Sayings and Doings.]

THE SPANISH ARMADA.

[From Southey's *lives of British Admirals*.]

'Meantime, though the negotiations at Ostend were still carried on in policy by the Spanish commissioners, there was on the part of the Spanish government a disdainful disregard of secrecy as to its intentions, or rather a proud manifestation of them, which, if they had been successful, might have been called magnanimous. The great king had determined upon putting forth his strength, and so confident were his subjects of success, that in the accounts which were ostentatiously published of its force, they termed it 'the most fortunate and invincible Armada.' The fleet, according to the official statement, consisted of 130 ships, having on board 19,295 soldiers, 8450 mariners, 2088 galley-slaves, and 2630 great pieces of brass; there were, moreover, twenty caravels for the service of the fleet, and ten six-oared *faluae*. The names of the most popular Romish saints and invocations appeared in the nomenclature of the ships; and holier appellations, which ought never to be thus applied, were strangely associated with the Great Griffin and the Sea Dog,

the Cat and the White Falcon. There were in the fleet 124 volunteers of noble family, having among them 456 armed servants.

There was no noble house in Spain but had a son, a brother, or a nephew in the voyage, embarked either at their own cost, or in the king's pay. The religioners who embarked for the service of the fleet, and for after operations, were 180, consisting of Augustinians, Franciscans, Dominicans, and Jesuits. Don Martin Alarcon embarked for the good of the heretics, as vicar-general of the holy inquisition; and implements of conversion of a more cogent kind than argument or persuasion are said to have been embarked in sufficient quantity. The business of reconciling England to the Romish see was committed to Cardinal Allen, as it had formerly been to Cardinal Pole, and an English translation of the pope's bull was ready for circulation as soon as a landing should be effected. The galleons, being above sixty in number, were 'exceeding great, fair, and strong, and built high above the water, like castles, easy, (says a contemporary writer,) to be fought withal, but not so easy to board as the English and the Netherland ships; their upper decks were musket proof, and beneath they were four or five feet thick, so as no bullet could pass them. Their masts were bound about with oakum, or pieces of faxed ropes, and armed against all shot. The galleasses were goodly great vessels, furnished with chambers, chapels, turrets, pulpits, and such like: they rowed like galleys, with exceeding great oars, each having 300 slaves, and were able to do much harm with their great ordnance.' In place of the Marquez de Santa Cruz, who was dead, the Duque del Medina Sidonia was general of this great armament; Don Juan Martinez de Ricalde, admiral."

The following addition will be considered very curious:

The Invincible Armada, as it was to have been, according to the Plan of the Duke of Alva.—The Invincible Armada with which Philip the Second designed to subdue England is sufficiently well known. His treasury was exhausted by the sums which he expended on it, and never after recovered its pristine palmy state. For the times, this armament was the largest which had ever been fitted out, for it contained no less than 130 ships of war, of which 65 were of the line, their tonnage was 57,868 tons. They carried no less than 2431* guns and mortars, 123,790 shot, 5175 hundred weight of powder, 1238 hundred weight of lead for the arquebuses (plomo para la arcabucera,) and 30,658 men, together with the necessary provision. They were accompanied by 180 priests and friars, being at the rate of one for every 155 men. There were also on board, of biscuit 11,000 cwt., bacon 6000 cwt., and cheese 3000 cwt. This, however, was not by any means the Invincible Armada originally proposed by Alva, and the design of which he sketched with such a degree of accuracy, that we must honor him as a man of genius, while we condemn him, as a tyrant. Whether England could have made any resistance had Philip II. been able to accomplish this plan, may reasonably be doubted:—According to Alva, the fleet was to have numbered 150 ships of the line (the real Armada consisting, as we have seen, of but 65); their tonnage would have been 77,250 tons. In addition to these ships of the line, there were also to have sailed 446 frigates, transports, and small vessels, with the tonnage of 33,500 tons; so that the whole tonnage amounted to 110,750 tons. The crews were estimated at 30,100, whose pay for eight months was to be 500,000 piasters. The land troops were to have amounted to 55,000 men. Let us only consider the times in which this was to have taken place. Even in our own days the largest fleet scarcely lands more than 20,000 men. The expedition which was in 1820 to have subjected South America, consisted of only 15,000 men. Spain, Naples, and Germany, joined to form this formidable array. On landing, it was to have had an artillery of 136 pieces of cannon, that of the fleet numbering 4,150† pieces. The service of the land artillery was reckoned at 28,000 cannon-balls, and 2,200,800 cwt. of powder. In those times, compared with our own, the guns were fired slowly and seldom, so that the ammunition seems but slenderly

* 5175 cwt. of powder is manifestly too little, while on the other hand, 2,200,800 is as plainly too much.

† 4150 pieces of cannon are far too few for 150 ships of the line, and 446 frigates; for if we reckon that each ship of the line carried at least 50 guns, they would have amounted to 7500; to which we may add 200 frigates at 20 guns each, giving 4000 more, making an aggregate of 11,500 guns.

provided. For the conveyance of the artillery when landed, Alva intended to ship 1400 mules; the rest of the service was to be supplied by 1200 horses.—The whole number of men on board the Armada would have amounted to 94,000. We cannot proceed farther with the items; but what we have already stated is sufficient to show the enormous scale, for the times, in which the expedition was planned. The original document containing this plan, was lately, and, we believe, for the first time, published in Spanish and German in Schepeler's *Beitragen zur Geschichte Spaniens*. He obtained it, and other ancient papers, in 1814, while serving in Spain.

THE OLD MAN'S RELICS.

I have been young, and wild, and gay,
To all but beauty blind:
And sighed all night, and sung all day,
To ladies stern or kind;
I've told my tale in manly prose,
I've written it in rhyme;
And now I'm crown'd with age's snows,
The scent of yonder withered rose
Recalls that pleasant time.
O then were hopes that chased my sleep,
And fears that made me thin;
And many subtle wiles and deep
My proud one's heart to win;
And raptures past the poet's guess
To wear so sweet a chain;
And now, perforce, content with less,
A gleam from yonder golden trees
Revives it all again.
O then were feasts in lighted halls,
And vows beneath the moon,
And fairy tales and madrigals
In garden bowers at noon;
And wanderings with my ladye love
Around the haunted hill;
And now my hand can hardly move,
It needs but touch the brodered glove,
And she's beside me still.
You smile at all these simple things
I hold in treasured store;
You ask the worth of flowers and rings
When love exists no more;
I wish to-morrow were my last,
If cold or careless grown,
To flame or wind I dared to cast
The precious relics of the past.
And joys for ever gone!

SURVEYORS' INSTRUMENTS.

Compasses of various sizes and of superior quality, warranted.
Leveling Instruments, large and small sizes, with high magnifying powers with planes made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by
E. & G. W. BLUNT, 154 Water street,
corner of Maiden-lane.

ENGINEERING AND SURVEYING INSTRUMENTS.

The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely new; among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy;—also, a Railroad Goniometer, with two Telescopes;—and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.
WM. J. YOUNG,

Mathematical Instrument Maker, No. 9 Dock street, Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.

In reply to thy inquiries respecting the instruments manufactured by thee, now in use of the Baltimore and Ohio Railroad. I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department. Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable. I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sight, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to later al angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,
JAMES F. STABLER, Superintendent of Construction of Baltimore and Ohio Railroad.

Philadelphia, February, 1853.
Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors.

E. H. GILL, Civil Engineer.
Germantown, February, 1853.
For a year past I have used Instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these Instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY R. CAMPBELL, Eng. Philad.,
German and Norristown Railroad

NOVELTY WORKS,

Near Dry Dock, New-York.

THOMAS B. STILLMAN, Manufacturer of Steam Engines, Boilers, Railroad and Mill Work, Lathes, Presses, and other Machinery. Also, Dr. Nott's Patent Tubular Boilers, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited.

STEPHENSON,

Builder of a superior style of Passenger Cars for Railroads
No. 264 Elizabeth street, near Bleecker street,
New-York.

RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part of the New-York and Harlem Railroad, now in operation.
J 18 11

RAILROAD CAR WHEELS, BOXES AND OTHER RAILROAD CASTINGS.

Also, AXLES furnished and fitted to wheels complete at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to. Also, CAR SPRINGS.

Also, Flange Tires turned complete.

J8 ROGERS, KETCHUM & GROSVENOR.



INSTRUMENTS.

SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

EWING & HEARTTE, at the sign of the Quadrant, No. 58 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude.

For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewing & Heartte.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all instruments are liable.

They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES F. STABLER,
Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' Instruments of your Manufacture, particularly Spirit Levels, and surveyors' Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

WILLIAM HOWARD, U. S. Civil Engineer.

Baltimore, May 1st, 1853.
To Messrs Ewing and Heartte.—As you have asked me to give my opinion of the merits of those Instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming acquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprise so well merits, I remain, yours, &c.

B. H. LATROBE,
Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them upon application, to any persons desirous of pursuing the same.

The schr. Manuelita, which was captured by the Nimble, Br. schr. of war, and sent into Havana, was supposed to be the fastest sailing slave out of the port, having been chased a number of times by cruisers, and escaped. She was 102 ft. 6 inches on deck, 24 9 beam, and drew 17 feet water. Crew amounted to 34. Her safety was so confidently anticipated, that a great part of her cargo (had 185 negroes when taken) were sold previous to her arrival.

Disaster.—The ship Montpelier, from New Orleans for this port, went ashore at Squam Beach, 15 miles north of Barnegat, on Tuesday morning, at 4 o'clock.

The Department of State has received information from the Chargé d'Affaires of the Netherlands, announcing the total disappearance of the Asiatic Chelera from that kingdom; and expressing the desire of his government, that any restrictions which may have been laid upon ships or goods coming from thence, in consequence of the prevalence of that disease, should be taken off.

Circular to Collectors, Naval Officers and Surveyors.

TREASURY DEPARTMENT,
Comptroller's Office, Feb. 18, 1834.

Six—According to the decision of Mr. Secretary Duane, communicated in the circular from this office, dated the 12th of August, 1833, namely—that all Wines, excepting those of France, were from and after the 3d day of March, 1834, to pay one half of the duty existing at the date of the decision, and French wines were to pay half the duty to which they were subject, under the act of 14th July, 1832; all wines, whether imported before or after the 31st of December, 1833, and remaining under the control of the proper officers of the Customs, after the 4th day of March, 1834, will, in conformity with the provisions of the 3d section of the act of 2d March, 1833, entitled "An act to explain and amend the 18th section of an Act, to alter and amend the several acts imposing duties on imports, approved the 14th July, 1832," be entitled to the reduction of one half the duties respectively specified in that circular, in relation to which reduction the third section of the said Act of 2d March, 1833, contains the following directions, namely:

"If any higher duty shall have been paid, such excess shall be refunded out of any money in the Treasury not otherwise appropriated, to the person placing the same in the custody of the Customs; and any outstanding bond or bonds, which may have been given for the duties on the same shall be cancelled."

In order that there may not be any misunderstanding, however, in relation to the Wines which have been imported since the 31st December, 1833, and which may remain under the control of the proper officers of the Customs, after the 4th March, 1834, it is deemed proper to state that, in case the duties on any Wines thus imported, exceed 20 per cent on the value, they will not, besides the reduction of one half of the duties already allowed, be also entitled to a deduction of the one-tenth part of such excess.

With a view to an uniformity of practice in the execution of the laws referred to, it is deemed proper to state that the reduction is, in all cases, to be made with reference to the amount actually paid or secured on the quantity as ascertained at the time of the deposit.

In those cases in which the whole of the duties shall have been paid before 4th March next, a Certificate is to be given by the officers of the Customs to the persons who may be entitled to the same agreeably to the subjoined form mark A, which certificate is to be presented to the Treasury for payment.

But when only a moiety of the duties shall have been so paid, as such moiety will constitute the amount of duty to which the Government will be entitled, the bond for the remaining moiety is to be cancelled; and where no part of the duties shall have become due and payable before wines shall be applied for to be withdrawn from the Custom House stores after the 4th March next, you are to take bonds with sureties to your satisfaction (provided the party has no bond due and unsatisfied) payable in three and six months after date of importation, calculating the duties at the rates which will be in force after that day.

It is deemed proper to add that a certificate agreeably to form A, is in no case to be issued to the party claiming it, if any debt he may owe to the Government be due and unsatisfied at the time.

All such cases are to be reported to the Department, and thereupon special instruction in relation to them will be given.

In the views thus communicated, the Secretary of the Treasury concurs. Respectfully,
Signed, Jos. ANDERSON, Comptroller.

BANK OF THE UNITED STATES,
March 5, 1834.

At a meeting of the Board of Directors held this day, Mr. Eyre, from the Committee on the Offices, presented the following report, which was read.

REPORT.

The Committee on the Offices having now ascertained by an experience of several months, the progress in the reductions in the business of the Bank, ordered by the Bank on the 8th of October last, avail themselves of the monthly returns from the Bank and all its offices, made up for the month of March, to present a statement of those reductions.

The design of the Board in directing them, was to protect the institution, and to provide the means of paying the Deposites of the Government, so as to press with as little injury as possible on the community. How far that purpose has been accomplished, will be seen from the following statement of the amount of loans, deposites, specie, and circulation of the Bank; from the 1st of October, 1833, to the 1st of March, 1834.

	Discount.	Dom. Bills.	Total.	Pub. Deposites.	Specie.	Circulation.
1833-Oct. 1	49,396 97 5	49,117 967 97	51,600,000 99 5	8,998,435 58	8,008,882 78	17,877,989 36
Nov. 1	1,069,812 94	1,617,750 41	2,687,563 35	8,998,435 58	8,008,882 78	17,877,989 36
Dec. 1	1,280,557 49	1,617,750 41	2,898,307 90	8,998,435 58	8,008,882 78	17,877,989 36
1834-Jan. 1	1,380,000 00	1,617,750 41	2,997,750 41	8,998,435 58	8,008,882 78	17,877,989 36
Feb. 1	1,574,522 89	1,617,750 41	3,192,273 30	8,998,435 58	8,008,882 78	17,877,989 36
Mar. 1	1,574,522 89	1,617,750 41	3,192,273 30	8,998,435 58	8,008,882 78	17,877,989 36
From this statement it will be perceived that from the 1st of October to the 1st of March, the total reduction in the loans, discount, was.....	1,574,522 89	1,617,750 41	3,192,273 30	8,998,435 58	8,008,882 78	17,877,989 36
While there has been an increase in the Domestic Bills of.....	1,574,522 89	1,617,750 41	3,192,273 30	8,998,435 58	8,008,882 78	17,877,989 36
Making the total reduction of Loans.....	1,574,522 89	1,617,750 41	3,192,273 30	8,998,435 58	8,008,882 78	17,877,989 36
During the same period, the reduction of the Public Deposits was.....	1,574,522 89	1,617,750 41	3,192,273 30	8,998,435 58	8,008,882 78	17,877,989 36
And of the Private Deposits.....	1,574,522 89	1,617,750 41	3,192,273 30	8,998,435 58	8,008,882 78	17,877,989 36
Making a total reduction of Deposites.....	1,574,522 89	1,617,750 41	3,192,273 30	8,998,435 58	8,008,882 78	17,877,989 36
During the same period, the specie of the Bank has diminished.....	1,574,522 89	1,617,750 41	3,192,273 30	8,998,435 58	8,008,882 78	17,877,989 36
And the circulation of the Bank.....	1,574,522 89	1,617,750 41	3,192,273 30	8,998,435 58	8,008,882 78	17,877,989 36
The comparison of the two periods will be more obvious, from the following tabular statement:	1,574,522 89	1,617,750 41	3,192,273 30	8,998,435 58	8,008,882 78	17,877,989 36
October 1, 1833.....	49,396 97 5	49,117 967 97	51,600,000 99 5	8,998,435 58	8,008,882 78	17,877,989 36
March 1, 1834.....	1,574,522 89	1,617,750 41	3,192,273 30	8,998,435 58	8,008,882 78	17,877,989 36
Loans.....	3,998,373 07		7,996,746 14			
Deposites.....				17,877,989 36		
Specie.....				8,008,882 78		
Circulation.....				10,063,441 51		
Discount.....				1,574,522 89		
Total.....				373,602 36		

The general result of the operations of the Bank during the last five months, have been,

1st. That the reduction of the loans has not been by upwards of four millions of dollars as great as the reduction of the deposites—and

2d. That the withdrawal of nearly eight millions of dollars, of those funds on which the Bank had based its accommodations to the community, has not yet been followed by a reduction of accommodations equal to one half of the amount of funds thus withdrawn.

3d. That from the 1st of January to the 1st of March, the increase in the loans of domestic bills amounted to nearly two millions and a half of dollars.

4th. That during the same period there has been an actual increase in the total loans of the Bank of \$1,256,368 16.

The Committee cannot regret the smallness of this reduction during the last five months, not even the actual increase of its loans since the first of January; because both have arisen from the strong desire of the Bank to give every relief to the community consistent with its own safety. But they cannot forbear to express their deliberate conviction, that these reductions are much less than are required for its security during the present unsettled state of the currency, and that it has now become the duty of the

Bank, gently, but steadily to diminish the amount of the claims upon it, by continuing to lessen its business.

Whereupon, on motion of Mr. Newkirk, the following resolution was unanimously adopted:

Resolved, that as much misapprehension appears to exist throughout the country, in regard to the reduction of the loans of the Bank since the removal of the public deposites, the foregoing report, be published for general information.

Extract from the minutes.

S. JAUDON, Cashier.

List of Subscribers to the Railroad Journal who have paid in advance to Jan. 1, 1835, —continued from February 22, 1834.

R. L. Livingston, Clermont, N. Y.
S. Fitch, Mystic, Ky.
J. M. Porter, Easton, Pa.
W. Cowdry, New Hamburg, Dutchess co. N. Y.
A. Barrett, Hamilton, N. Y.
W. J. McAlpine, Hamilton, N. Y.
John Haggins, Billerica, Mass.
Thos. F. Purcell, Williamsport, Md.
Peter Stewart, Amsterdam, N. Y.
A. B. Warford, Columbia, Pa.
O. R. Van Benthuyssen, Albany, N. Y.
James Tolfree, Ithaca, N. Y.
James Stewart, Williamstown, Pa.
J. Dana Allen, Clinton, N. Y.
Joseph Lomas, Newburgh, N. Y.
Alexander Twining, West Point, N. Y.
J. Richardson, Wilmington, Del.
S. S. Durfee, Hudson, N. Y.
D. Crawford, Newburgh, N. Y.

TOWNSEND & DUFFEE, of Palmyra, Manufacturers of Railroad Rope, having removed their establishment to Hudson, under the name of *Duffee, May & Co.* offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J. B. Jervis, Eng. M. & H. R. Co., Albany; or James Archibald, Engineer Hudson and Delaware Canal and Railroad Company, Carbondale, Luzerne county, Pennsylvania.
Hudson, Columbia county, New York, {
January 29, 1835.

RAILWAY IRON.

Flat Bars in lengths of 14 to 18 feet counter sunk holes, end cut at an angle of 45 degrees with splicing plates, nails to suit.

Ninety-five tons of 1 inch by 1/2 inch,	200	do.	1 1/2	do.	do.
do.	40	do.	1	do.	do.
do.	800	do.	2	do.	do.
do.	800	do.	2 1/2	do.	do.

soon expected.

250 do. of Edge Rails of 36 lbs. per yard, with the requisite chairs, keys and pins.

Wrought Iron Rims of 30, 33, and 36 inches diameter for Wheels of Railway Cars, and of 60 inches diameter for Locomotive wheels.

Axles of 2 1/2, 3, 3 1/2, 3 3/4, and 4 inches diameter for Railway Cars and Locomotives of patent iron.

The above will be sold free of duty, to State Governments and Incorporated Governments, and the Drawback taken in part payment.

A. & G. RALSTON.

9 South Front street, Philadelphia.

Models and samples of all the different kinds of Rails, Chairs, Pins, Wedges, Spikes, and Splicing Plates, in use, both in this country and Great Britain, will be exhibited to those disposed to examine them.

LOCOMOTIVE ENGINES.

THE AMERICAN STEAM CARRIAGE COMPANY, OF PHILADELPHIA, respectfully inform the public, and especially Railroad and Transportation Companies, that they have become sole proprietors of certain improvements in the construction of Locomotive Engines, and other railway carriages, secured to Col. Stephen H. Long, of the United States Engineers, by letters patent from the United States, and that they are prepared to execute any orders for the construction of Locomotive Engines, Tenders, &c. with which they may be favored, and pledge themselves to a punctual compliance with any engagements they may make in reference to this line of business.

They have already in their possession the requisite apparatus for the construction of three classes of engines, viz. engines weighing four, five, and six tons.

The engines made by them will be warranted to travel at the following rates of speed, viz. a six ton engine at a speed of 15 miles per hour; a five ton engine at a speed of 18 miles per hour; a four ton engine at a speed of 22 1/2 miles per hour. Their performance in other respects will be warranted to equal that of the best English engines of the same class, with respect not only to their efficiency in the conveyance of burdens, but to their durability, and the cheapness and facility of their repairs.

The engines will be adapted to the use of anthracite coal, pine wood, coke, or any other fuel hitherto used in locomotive engines.

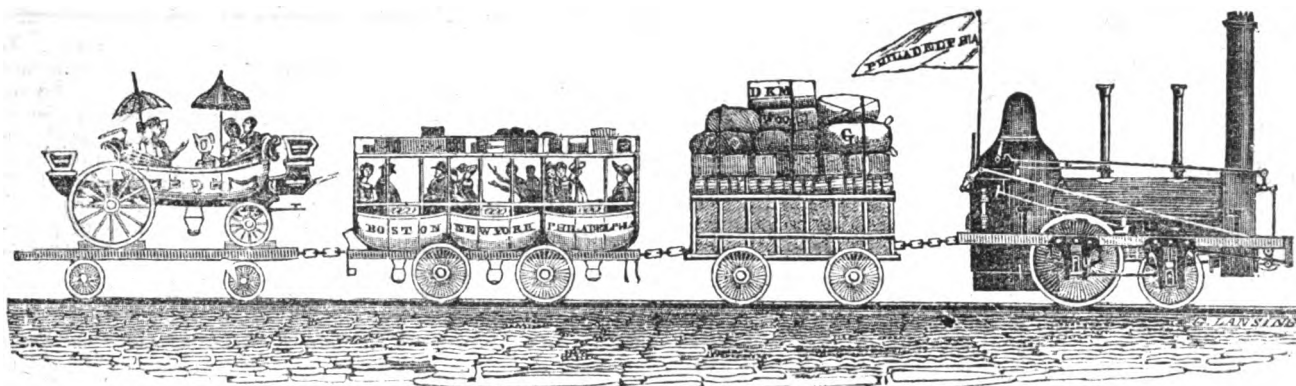
The terms shall be quite as favorable, and even more moderate, than those on which engines of the same class can be procured from abroad.

All orders for engines, &c. and other communications in reference to the subject, will be addressed to the subscriber, in the city of Philadelphia, and shall receive prompt attention.

By order of the Company, WILLIAM NORRIS, Secretary.

December 2d, 1833.

For further information on this subject see No. 40, page 772 of this Journal.



AMERICAN RAILROAD JOURNAL, AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT No. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, EDITOR.]

SATURDAY, MARCH 15, 1834.

[VOLUME III.—No. 10.]

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, MARCH 15, 1834.

TO CORRESPONDENTS.—Our friends will not, we trust, withhold their valuable communications, because they are sometimes delayed. They must recollect that the times are 'out of joint,' and that we have other duties to attend to just now.

We are gratified to learn that the **ITHACA AND OWEGO RAILROAD** will probably be in use by the middle of April, through its *whole line*.

ENGINEER'S MANUAL.—We publish the following extract from the preface of a forthcoming work, believing that in so doing we shall confer a favor on many of our readers. The author of the work is a practical engineer, engaged upon one of our western railroads, and has often furnished us with valuable communications for the Journal, signed "V. D. G." We hope to be able to make further extracts from the work itself, by which those most interested in it may be able to judge of its utility to the profession.

In presenting the present little work to the notice of the public, the author is actuated with the hope of contributing in a small degree to the collection of such principles as are daily required in locating railroad curvatures with ease, accuracy, and despatch. The author has not possessed an opportunity of ascertaining extensively what may be the various methods of calculation at present resorted to by scientific and skillful engineers generally, in determining the relative positions of given points in the different curves and tangent lines which frequently come under consideration in the field; and the principal formulas which are here offered to the public, embracing these

cases, are therefore *such only* as have been used with advantage by himself. The only methods of calculation which he knows to be *now in use by others*, and which are sufficiently commodious for purposes in the field, are of an approximative kind; and under circumstances which often occur, the use of those approximative results is attended with inconvenience and delay. It is therefore hoped that the different formulæ which will be here found investigated and arranged for use will be acceptable to those who may not be in possession of more convenient methods of computation, which are sufficiently rigorous to pass a *long curve* through a given point at the first attempt.

The second part of this Manual is devoted to the methods of constructing the elliptical curve. It is well known that the true curve of an ellipsis is produced by an oblique section of a cylindrical surface, whether that surface be circular or elliptical; and hence it is that the true figure of an ellipsis should be traced with precision in the construction of skew bridges, having either circular or elliptical arches. Other cases in the department of a civil engineer might be mentioned, in which a perfect ellipsis is required; and there is no method available in practice hitherto published, which is known to the author, for constructing an oval, consisting of given circular arcs, and approaching with sufficient precision to the curve of an ellipsis.

A table of natural sines and cosines is to the engineer almost of daily use. Such a table is therefore subjoined to this work. It is also thought desirable to add a table of the square and square roots of numbers; which not only very frequently saves labor, but will also be the means of diminishing the liability to err in numerical calculations. Indeed, those two tables, or others of a similar kind, will be considered indispensable to the skillful prosecution of all field operations, by those *who know* the facilities which may be derived from them.

A speed of 40 miles an hour with a light load, has been obtained upon the Manchester railway; and Mr. G. Stephenson, the engineer, has stated his opinion that an engine might be constructed to run 100 miles within the hour, although he acknowledges that "at that rapidity of motion the resistance of the atmosphere would be very considerable." Engines are now made with eight times the power of the Rocket, yet with little more weight resting on each rail, the load being equally divided upon six wheels, and the machinery placed in a more advantageous situation than formerly. The tubes of the boiler are made smaller and more numerous, and of brass instead of copper. The last engine put on the railway ran 23,000 miles with the most trivial repairs, taking every day four or five journeys of thirty miles each.

The following communication was received in due time, but delayed by a press of other matter previously in hand.—[Ed. R. R. J.]

Internal Improvements, No. IV. By F. To the Editor of the American Railroad Journal and Advocate of Internal Improvements.

SIR,—Before taking leave of the subject of turnpike roads, we must intreat your further indulgence for a few moments, to make a brief reply and offer a few remarks in relation to an objection that has been frequently advanced against the indiscriminate adoption of M'Adam's system of construction. It may be true, as has been stated, that there are spots highly favored in themselves as to natural advantages,—rich in every mineral and agricultural resource—but at the same time so sequestered and shut out beyond the pale of intercourse with more populous parts of the country, as to render them unavailable, except to a very limited extent. Capitalists, however, cannot be induced to embark in projects that offer but little promise of profit, and that little uncertain and remote. They require something more tangible, and will not seek in distant quarters for that which they may have without seeking at home; and it therefore stands to reason, that so long as safer and more advantageous investments are to be met with here by greater facilities, such places, however strong their claim to notice may be, must of necessity remain in a state of crude, uncultivated nature, or be content with such modifications of approved plans as may be in some degree commensurate with their available means.

We are no friends to the forcing system, and would at any time use our best efforts to discourage any project having a tendency to that end; but, we still think that some substitute might be safely recommended to meet such cases as those alluded to above, without in any manner compromising the great end of Internal Improvements, which is to bring out to the best advantage the resources of a country by any means that the nature and extent of those resources will justify. If a substitute be adopted, it should combine in its qualifications a hard and even surface, with great cheapness of construction. These are qualities indispensably necessary to the furtherance of the end in view—and as they seem to be embodied in a plan recently proposed by an engineer of some eminence in Ohio, we shall content ourselves in referring to a former number of this journal for a full explanation of its principles, by observing that much depends upon the quality and seasoning of the timber used in the formation of the ways. Evaporation principally takes place in the direction of the fibres of the wood;

and the juxtaposition of the parts where green timber is used must therefore prevent the whole escape of the natural juices. Decay, under these circumstances, is soon engendered, and the durability of the road thereby materially affected. The originality and real merit of the plan, however, recommend it warmly to notice; and, as applicable to the cases alluded to above, where preliminary measures are necessary to the introduction of more perfect means, it is particularly deserving of attention. For the end ever to be kept in view in the introduction of all improvements and innovations, should be the best interest of the particular section of country through which it may pass; and to this effect such measures only should be adopted as a calm and deliberate examination of its condition, with a careful investigation of its capacity of improvement, may dictate as most conducive to the speedy development of its natural resources. It will be admitted that every district possesses certain capabilities, which are only prevented from being brought into action by its distance from some sea-port town; and that every place having a tendency to increase its facilities of intercourse therewith must exercise a corresponding influence on the improvement of its condition. It is still, however, of vital importance to the early and successful establishment of prosperity, that the infantine exertions of such district be carefully fostered and guarded against all undue encroachments—thus, an avenue being laid open, no further apprehension need be entertained. A change of condition will soon be manifested by increased activity and prosperity; and its necessities will thenceforth be promptly met by additional facilities: for, as the motive that first incites to action stimulates with greater force to perseverance, so the enjoyment of increased prosperity animates to still greater exertions for its consummation.

As civilization attains a higher degree of perfection, and commerce becomes more generally extended, the luxuries and comforts of life demand the adoption of some new mode of communication more suitable to the advanced state of the arts and manufactures. Railroads and canals thence took their rise; and all countries to which ancient history directs our attention, seem to have availed of them according as necessity has dictated or circumstances justified. Indeed, it is a remarkable fact, that the only countries which have never emerged from their primitive state of barbarism and ignorance are those which are destitute of the means of inland navigation. This is strikingly exemplified in the inland parts of Africa, and in that part of Asia lying north of the Euxine and Caspian—the ancient Scythia and the modern Tartary and Siberia. On the other hand, wherever these means have been enjoyed, there civilization has prospered, and the arts and sciences have flourished. Thus, Egypt was the birth-place of agriculture and manufactures—the banks of the Nile were the sites of its towns and villages, which, together with those of the ancient Indians and Chinese, derived their prosperous condition and immense wealth almost exclusively from their inland navigation.

The experience of past ages therefore proves to us that every means, having for its end the promotion of internal commerce, is deserving the consideration of all civilized communities, and particularly of one like our own, in the enjoyment of every variety of soil and climate, and capable of every species of production, either of agriculture or manufactures. The system of society is so complex in its character, and its various orders so mutually interwoven by natural causes, that a good effect cannot be produced in any one part without exercising a corresponding happy influence over the other; generating thereby a mutual dependence among all classes—the high, the low—the rich, the poor—the agriculturist, the manufacturer. The interests of each converge towards the same point; and it should, therefore, be the duty of each, collectively and individually, to concentrate

their energies, and unite their efforts, to the accomplishment of the same great end. Once establish a mutual interchange of the different products of industry, by facilitating the means of intercourse between distant places, and the very objects of that industry thence become more varied, and the general commerce of the country less liable to interruption from the effects of artificial causes; and the action of any particular calamity, to which every society in its social character is more or less exposed, would thence produce but a temporary and partial evil, and would find its own correction in the reaction produced by a continuation of the exciting cause.

These remarks will not, of course, apply to a country exclusively possessing agricultural industry. In such country, the influence of foreign competition on its peculiar staples exercises a direct tendency to stimulate production to an extent that is calculated to overstock and glut the market. The price of the article thence becomes insufficient to meet the expense of raising it; and the cultivator, as a consequence, unless speedily relieved by the introduction either of new staples or new markets of consumption, must sooner or later sink under the pressure, and be reduced to the lowest state of poverty. A most deplorable instance of this truth has already been experienced in some of the Southern States of this Union—where the very articles that, for many years, proved a fertile source of revenue to the cultivator, became, not long since, owing to an excessive production, so reduced in value as to be altogether inadequate to the task of maintaining him above actual want.

But, however palpable the causes by which these effects are produced may appear, it is still a prolific source of speculation among philanthropists how far the rapid extension of manufactures, through the medium of machinery and internal improvements, is advantageous to a country as regards its moral and social condition. It has been observed, and cannot be denied, that every improvement in machinery, by which manual labor is materially lessened, is calculated to produce distress with a certain class of the community, by depriving them of their usual means of employment, and obliging them thereby to recommence the world, so to speak, in the adoption of some new vocation. But, at the same time, it must be remembered that the direct tendency of the operation of any improvement of this kind, is to increase the consumption of the product of its labors by lessening its nominal value. A wider field is thus at once opened to enterprise—additional resources made attainable,—and, therefore, while the evil complained of is only temporary, and confined to a limited, a very insignificant, numerical portion of that community, the benefit conferred is permanent and diffused throughout the whole mass of society. Besides, what tends more to elevate the condition of the poor—to exalt and ennoble the character of man—than the encouragement of all such means as will supersede the necessity for application of mere animal force? It is the degrading tendency of his occupation which alone reduces the poor operator to the lowest grade of human depravity—hardens his conscience—and stifles in his breast every natural feeling of moral excellence. Relieve his mind from this sense of degradation, and his ambition will soon take a loftier flight. He will feel a superiority over the brute creation that will elevate him above his former sphere and urge him on to greater efforts. The faculties of mind thus awakened will be thenceforth directed to the accomplishment of those means of luxury and enjoyment that before were only attainable at unceasing toil and labor.

It is unnecessary to pursue this subject further; for it is obvious that every improvement in machinery must be attended by results highly beneficial to the community at large; and internal communications, as a step preliminary to their introduction and application, should engage a large share of attention from

every well wisher to his country. Let every channel, therefore, through which information on the subject can be derived, be opened to public inspection; let its sources be examined with a view to the general good; and let its stream flow pure and unadulterated by the poison which has hitherto polluted it, and we then hazard nothing in the assertion that, under its genial influence, the arts of peace will be cherished and commercial reciprocities cultivated. F.

New-York, February 8, 1834.

The late Experiments made on the Liverpool and Manchester Railway, to determine the accuracy of the Undulating Railway Theory. [From the London Mechanics' Magazine.]

SIR,—The truth of Mr. Badnall's statements of the experiments on the Sutton inclined plane being of importance to those who have no other means of forming their judgment upon the undulating railway theory, I take the liberty of asking that gentleman, through the medium of your Journal, which contains his account of the trials on the 23d and 24th of September (see No. 530,) how it happens that your printed statement doth vary from the verbal one which he was so polite as to give me at the Star hotel, Liverpool, on the evening of the said 24th, in the presence of Mr. Perkins the engineer, and several other gentlemen? Mr. Badnall read from his note-book, carefully and distinctly, while I wrote down his words (in ink), which, at my request, were repeated by him to prevent mistakes, and I have now the memorandum before me. Mr. Badnall will recollect, that I told him *the same night* that the results did not accord with each other, if the inclination of that part of the Sutton plane, upon which the experiments were tried, was really as great as he had assumed it to be—namely, 1 in 96.

The statement which Mr. Badnall then deliberately gave me was as follows, and refers only to the first, second, and eleventh experiments:

“Weight of the Rocket engine and tender, 6½ tons; wheels 4 feet 9 inches diameter. First.—Began the ascent (without steam) at the rate of 18 miles an hour (equal to 18 strokes of the piston in 10 seconds), and ran up the inclined plane to a distance of 217 yards, by momentum. Second.—Returned to the foot of the inclined plane (using the full power of the engine), and acquired a velocity of 22 miles an hour (or 22 strokes of the piston in 10 seconds); shut off the steam, and ran, on the level plane, to a distance of 454 yards, by momentum. Eleventh.—Two engines took a load of 35 tons on the level, and reached the foot of the inclined plane with a velocity of 12 miles an hour (or 12 strokes of the piston in 10 seconds). One of the engines being left behind, the other (the Rocket) shut off the steam, and ascended a space of 177 yards, by momentum.”

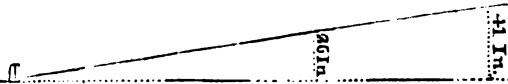
The statement with regard to the last experiment, it will be seen, agrees with your printed account; but the two first do not, as to the fact of the acquired velocity; yet it is a truth which Mr. Badnall will not deny, that I at first understood him to say “twenty to twenty-two miles an hour; but, upon my repeating those words, thinking the expression too vague, he corrected me or himself by saying, “twenty-two precisely.” I feel sorry for the necessity of calling upon Mr. Badnall to explain how it was that, four days afterwards, he should send you so different an account for publication. Did he mean to deceive me, or your readers? In either case, I opine, he will be considered as having rather too much of “the man of the world” in his composition. I should have taken this step before now, had I seen the paper in No. 530 sooner; but I did not get it till the 2d inst. in the last monthly part, and have since then been closely engaged in my regular vocation.

Being desirous of finding out the error, for I felt assured of its existence, and Mr. Badnall hav-

ing returned to the Isle of Man, I wrote to Mr. Booth on the subject, of which letter the following is a copy:

"SIR,—Having been invited by Mr. Badnall to witness the experiments on the Sutton plane on Tuesday, the 24th ult., I went there on that day, but, as you will probably recollect, was too late for personal observation; for, at the moment I arrived, the Rocket engine had received some damage, and Mr. Badnall, with yourself, was on the point of returning to Liv-

erpool by the same train. Mr. Badnall gave me the principal results on our arrival at his hotel in Liverpool, which I cannot at all reconcile, upon the supposition that the inclination of *that part* of the Sutton plane is 1 in 96. Perhaps the quarter-mile post which you assumed as the *foot* of the plane is not precisely so, or some alteration may have taken place since their first construction. If accurate levels are taken, I am inclined to think the section will be found as follows:



"Should you think it necessary to have actual levels taken for the purpose of corroborating the other facts, will you have the goodness to favor me with the result? And you will further oblige by informing me when you next try experiments with reference to the undulating theory, and by allowing me to be present during the trial. I am, sir, your obedient servant,

H. S.

Sheffield, Oct. 1, 1833."

"*Postscript.*—I ventured to tell Mr. Badnall on the same evening, that there must be some material error, and that I thought it was in the assumption of 1 in 96 for the inclination. This well-meant observation, however, did not appear very palatable."

"To Henry Booth, Esq., Treasurer to the Liverpool and Manchester Railway Company."

It is to be regretted, for the sake of truth, and Mr. Booth's acknowledged character as a gentleman and a lover of science, that all the notice of this communication which I have had the honor to receive, is contained in a postscript of an unlooked-for letter from Mr. Badnall, dated October 19th. He says,—“Your letter to Mr. Booth may lead you to a better acquaintance with the precise inclination of the Sutton inclined plane; but, however the inclination may vary from the reputed rise, it cannot affect the proportionate result of experiments.” True, it cannot; but it affords the means of *checking* the statement of Mr. Badnall; and there would have been another check, if that had been done which on the 24th September I said ought to have been done, namely, accurate observations recorded of the *length of time* occupied in traversing the respective spaces by means of the acquired *momenta*. This hint, it appears, has not been forgotten in trying the subsequent experiments, and its being acted upon may be attributed to Mr. Robert Stephenson, of Pendleton, who perfectly agreed with me in opinion as to its propriety. [See *Liverpool Mercury* of October 18.]

As soon as I am more at leisure I shall send you some further ideas on the undulating railway theory, which I will endeavor to condense as much as possible, and will not forget the friendly notices of your correspondents “Junius Redivivus” and “S. Y.” Yours, respectfully,

HENRY SANDERSON.

Sheffield, Nov. 10, 1833.

Mr. Badnall's Explanation of the Alleged Discrepancies in the Reports of the Recent Experiments on the Liverpool and Manchester Railway, to determine the correctness of the Undulating Railway Theory. [From the *London Mechanics' Magazine*.]

SIR,—I feel indebted by the opportunity you have afforded me of explaining the cause of the difference between the statements alluded to by Mr. Sanderson, and those sent by me to you for publication. I have no doubt that Mr. Sanderson copied my observations correctly; and those observations, at the time I communicated them to him, I believed to be perfectly correct. Mr. Sanderson is aware that, on the day the experiments were tried, I was laboring under severe indisposition; and, as the weather was extremely inclement, I did not take the same active part in the experi-

ments as Mr. Booth, Mr. Rae, and Mr. Scott. The observations I made, as they appear in my note-book, in regard to the velocity of the engine and train at the foot of the ascent, were founded on my own calculation of the number of strokes which the engine appeared to be working when she passed the spot on which I stood. The spaces passed over were measured, and the particulars agree with the statement which I gave to Mr. Sanderson. Immediately after the experiments were concluded I proceeded to Liverpool with Mr. Sanderson, whom I met in one of the railway carriages; and the same evening I gave him the particulars to which he alludes. He will perfectly recollect that the following day I was not, through indisposition, able to get up till one o'clock; and, having an arrangement at Manchester, I could not, on that day, compare my notes with Mr. Booth's. At two o'clock I left for Manchester, and gave, at Newton, the same particulars which I had given to Mr. Sanderson to Mr. Allcard. On the 28th of September I left Mr. Sanderson in Manchester, and returned to Liverpool; and, previously to addressing you, I considered it better to have an interview with Mr. Booth, who was in possession of the notes taken by Mr. Rae and Mr. Scott, and who had himself carefully taken down all the particulars. At this interview I found that I had over-estimated the velocity at which the piston was moving; and the statements, therefore, which I sent to you were *not my own*, as given to Mr. Sanderson, but those of three other individuals, which decidedly told more *against my principle* than *my own* would have done.

For instance, had the engine been travelling at eighteen miles an hour at the foot of ascent, before rising the hill, and twenty-two miles an hour at the same point, after descending the hill, which are the particulars given to Mr. Sanderson, the result would have shown a greater gain by the undulating system than when the velocities were fifteen strokes of the piston (or about fifteen miles an hour) before ascending, and sixteen strokes of the piston (about sixteen miles an hour) after descending, as published in your Magazine.

I have only to add, that in all the statements of the experiments which I *have sent to you*, I have cautiously avoided laying myself open to the slightest charge of error or partiality. On the contrary, my notes have always been corrected by, and compared with, the notes of others.

With regard to the particular inclination of the Sutton inclined plane, it has always been understood to be about one in ninety-six. After my first experiments were made, however, the levels were taken afresh, and it was found, that towards the foot of the plane the inclination was considerably less than the average rise. For instance, from the point from which the ascent of the Rocket engine, &c. was calculated, the plane rises as follows:

1st	88 yards,	- - - - -	1 in 122.
2d	do.	- - - - -	1 in 105.
3d	do.	- - - - -	1 in 97.
4th	do.	- - - - -	1 in 94.
5th	do.	- - - - -	1 in 92.
6th	do.	- - - - -	1 in 89.
7th	do.	- - - - -	1 in 89.

And the entire distance here denoted exceeds

that to which, in any of the experiments, the train ascended.

It must, however, be evident, that however a variation in the inclinations may affect Mr. Sanderson's calculations, it cannot possibly,—which he will, no doubt, allow,—affect the comparative results of the experiments.

I remain, sir, yours, &c.,

RICHARD BADNALL.

Farm-hill, near Douglas, Nov. 19, 1833.

N. B.—There can be no doubt as to the measurement of time being the best test; which test was adopted in all the subsequent experiments, as agreed upon by the engineers present.

[From the *Mechanics' Magazine*.]

ERICSSON'S CALORIC ENGINE.—In our number for December we promised a description of Mr. Ericsson's Caloric Engine as soon as it could be procured. We have much satisfaction in being thus early able to redeem that pledge. The following is from the *London Mechanics' Magazine*:

The susceptibility for heat, possessed by gaseous and fluid bodies, is known to be nearly unlimited. Neither density nor pressure seems to exercise the smallest counteracting influence. The densest medium will take up a given quantity of heat with as much facility as the rarest; and when two mediums of unequal temperatures are brought in contact, they become equalized immediately, no matter how different their densities may be.

We have now to direct the attention of our readers to a mode of applying these physical truths to the production of mechanical power, which seems to us to be not only decidedly novel, but to be fraught with results of the greatest public importance.

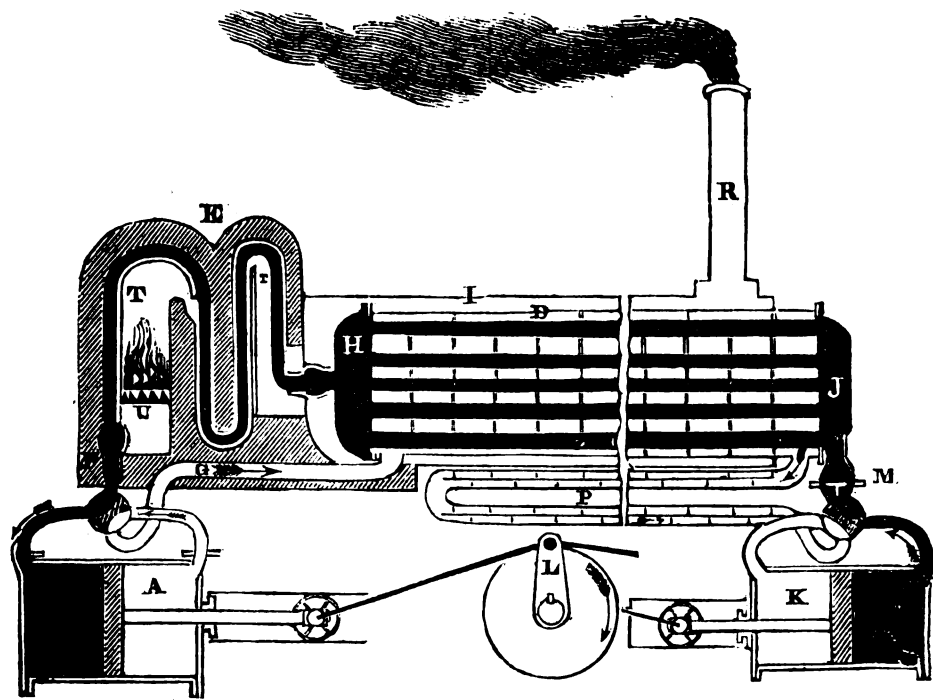
We allude to the patent recently taken out by Mr. Ericsson, for what he calls his “Caloric Engine.” The grand feature by which this engine is distinguished from the steam engine, and all other power machines, is this, that the same given quantity of heat which sets it in motion is used over and over again to keep up that motion, and that no additional supply is wanted beyond what is requisite to compensate for a small loss incurred by escape and radiation.

We have seen, as well as hundreds of others, during the past week, an engine constructed on this plan actually at work, and can bear our personal testimony to its working as powerfully and equably as any steam engine could do.

The engine which we saw at work is, in all external respects, saving only the small space which it occupies, exactly similar to a high pressure steam engine. It is calculated to be of five horse power. There are two cylinders: one called the cold cylinder, 10½ inches in diameter, and the other the working cylinder, 14 inches in diameter, both with an 18 inch stroke. The engine was worked under a pressure of 35 lbs. to the square inch, and its power checked by a break, loaded with 4,000 lbs., acting on the circumference of a wheel of 2 feet diameter.

The circulating medium employed in this engine is simply atmospheric air; but of course that or any other fluid medium may be employed with equal facility for the purpose of using the heat over and over again—some perhaps with much greater facility.

To describe the interior arrangements, by which motion is given to the engine, would lead us into a multiplicity of details, not at all necessary for the comprehension of the



principle of its action. All that is needful for this purpose the reader will find in the simplified diagrammatic arrangement exhibited in the prefixed engraving.

D D is a cylindrical vessel termed the "regenerator," which, in the actual engine, is 7 feet 6 inches long, and 8½ inches in diameter, fitted with small tubes, which pass through both ends, and terminate in the caps H and J. It also contains a number of division plates, through which these tubes pass, and which plates have segments cut out alternately from their tops and bottoms. The tubes themselves likewise contain a number of small divisions, tapering off towards the centre, each placed in an opposite direction to the other. T T is one of a series of bent tubes, inclosed in a stove, E, and acted upon by the fire, U, the combustion being supported by the draft produced by a chimney, R. The pipes in the stove are all connected with two larger pipes, the one of which communicates with the cap, H, and the other, as shown by the diagram, communicates with a four-way cock, attached to the passage-pieces of a cylinder, A, which is the working cylinder of the engine. P represents one or more pipes, exposed to some cooling medium, and is termed the "cooler;" it contains also a number of division plates, similar to those in the tubes of the regenerator, as also with the four-way cock attached to the cylinder K.

The whole of the apparatus, namely, the body of the regenerator, its tubes, the caps H and J, the pipes in the stove, the cooler P, pipe G, and the two cylinders, with their passage-pieces, we will now suppose to be all charged with common air, or any other æriform substance. We will suppose also that the portion of that air which is marked black in the diagram is kept under greater pressure or more compressed than the rest, which is left blank. Let us suppose farther, that the air which the cylinder A, the stove pipes T, the cap H, and the pipe G, contain, is raised to some considerable temperature, and that the air contained in the body, as well as the air in the tubes of the regenerator, is nearly of the same temperature of that

nearest to the cap H, gradually lessening towards the cap J, so as to be there of an equal temperature with the surrounding atmosphere. Now, since that portion of the air contained in the apparatus which is marked black has been changed to a greater pressure than the rest, and as the cylinder A, with its piston, is larger than the cylinder K, with its piston, it follows that motion must be produced in the direction shown by the arrow marked on the crank L.

The force thus exerted will, of course, depend on the difference of the areas of the pistons, and on the difference in pressure given to the circulating medium. It is evident that the hot air, which, by the motion of the piston, must escape from the cylinder A through the pipe G, will, in its winding passage through the body of the regenerator towards the cooler P, give out its heat to the cold air forced from the cylinder K, the particles of the latter being also in a constant state of change in passing through the tubes towards the stove pipes. The pistons having performed the full stroke, the two four-way cocks are then reversed, when a retrograde action takes place; the motion of the opposite currents in the regenerator still continuing the same as before. A constant motion will thus be produced, and a constant transfer of heat kept up. The object of the cooler P is to abstract the heat, which, on account of the different capacities for heat of the two currents, is not taken up in the regenerator, and the object of the stove is to supply the heat thus carried away, as well as to compensate for losses by radiation, and to raise the temperature at the commencement.

It need hardly be stated that the lesser volume of air coming from the cold cylinder fills the larger space in the hot cylinder, because it gets heated in passing through the regenerator and through the stove; while on the other hand, the larger escaping volume from the hot cylinder finds room in the lesser space of the cold cylinder, because it parts with its heat before getting there.

By charging the apparatus, the circulating medium may, of course, be kept under any desirable pressure, and thus the power

of the engine varied at pleasure. High pressure will naturally produce the greatest proportionate effect, the loss by radiation being the same under whatever pressure.

We were anxious to satisfy ourselves as to the equality of the action of the engine, and with this view timed it repeatedly: the number of strokes was regularly 56 per minute.

The total consumption of fuel, when the engine is working at this rate, is stated to be no more than two pounds per horse power in the hour; and the entire loss of heat incurred by the transferring process (that is, the whole heat carried away by the cooler,) is estimated not to exceed the product of 3 lbs. of fuel per hour. That the fuel required is not even less than two pounds, is solely owing to the great radiating surfaces unavoidable in an engine on a small scale, and to these radiating surfaces not having in the trial engine been covered by any non-conducting substances.

Mr. Ericsson has published a pamphlet explanatory of the principle and construction of his caloric engine. We extract from it the following additional information:

"By keeping the pipes in the regenerator so charged with air as to support a column of mercury 56 inches high, the greatest effect is produced in the trial engine. By the manner in which the side-valves are worked, the pressure in the body of the regenerator always adjusts itself, so as to support a column of mercury 18 inches high; so that an effective pressure, equal to 38 inches of mercury, is kept up. A break, well oiled and loaded, with 5,000 lbs. weight acting on the circumference of a wheel of two feet diameter, fixed on the fly wheel shaft, will at the above pressure keep the speed of the engine at 55 revolutions per minute. At this speed, 176 cubic feet of heated air, of a mean pressure of 17 lbs. to the square inch, are admitted into the working cylinder per minute, thereby exerting a force equal to 431,970 lbs. moved through the space of one foot: thus $\frac{431,970}{33,000} = 13$ horses' power are communicated to the main crank of the engine. The estimating this power is, however, of no other use than to give an idea of the amount of friction to which the crank-engine is subjected. In the same space of time, or a minute, 94.6 cubic feet of cold air, of a mean resistance of 14 lbs. to the square inch, are forced or put into circulation by the cold cylinder, and equal to a resistance of 190,575 lbs. moved through the space of one foot. This amount, divided by 33,000, will give 5.7 horses' power required to work the cold cylinder—hence the two cranks give and receive the power of upwards of 18 horses. By communicating the power of the hot cylinder to the cold cylinder in a direct manner, the available power, setting frictions aside, would be $431,970 - 190,575 = 241,395$ lbs. moved through the space of one foot. This is equal to $\frac{241,395}{33,000} = 7.3$ horses' power—deducting 2.3 horses for frictions would leave 5 horses. On these grounds the trial engine has been estimated at 5 horses' power. The transferring process has succeeded to such an extent, that out of the 10 lbs. of fuel which the engine consumes per hour, the product of heat from 3 lbs. of fuel only are wasted or carried away by the cooler. This important fact has been ascertained by immersing the cooler in a cistern containing precisely 1081 lbs. of water, and by observing the elevation of temperature

after an hour's work of the engine; and the increase of temperature in that time is not quite 20 degrees—one pound's weight of fuel being capable of raising the temperature of 9,000 lbs. of water, it follows that the 1081 lbs. contained in the cistern would be raised 8.3 degrees by the combustion of 1 lb. of fuel, and hence that the actual increase of 20 degrees of temperature is effected by the combustion of less than 3 lbs. of fuel. The great discrepancy between the quantity of fuel thus wasted, and that actually consumed by the engine, must be accounted for by the fact, that a considerable extent of radiating surfaces are exposed to the cooling influence of the atmosphere without being surrounded by any imperfect conductors."

[FROM THE NEW YORK AMERICAN.]

Ithaca and Owego Railroad Company.—It will gratify the holders of the Stock of this Company to learn that there is now every reason to expect that the whole road will be ready for use, by the middle of next month. As very little if any authentic information has been given on the subject of the prospective revenue of the Company; we take the liberty of supplying the deficiency, by giving the following extract from the speech of the Hon. Charles Humphrey, in the debate on the subject of the Tompkins County Bank.

I will not trespass upon the indulgence of the House, by entering minutely into a detail of the various production of the surrounding country, which find a market at Ithaca. As some of the leading articles besides lumber, I may mention between three and four hundred thousand dollars worth of wheat and flour; between three and four hundred tons of butter; large quantities of pork; coarse grains, &c. which were exported by way of the Erie canal the last year. And notwithstanding the exports, from seven hundred to a thousand laborers, in addition to the ordinary inhabitants of the county, many of them with families, were supplied during the same period with provisions at this market; and large quantities were transported to the south and east by land carriage. I also find among my statements, derived from sources entirely to be relied upon, live stock sent from the country, to more than \$150,000 in value; cotton and woollen goods to more than \$100,000; between 2 and 300 tons of ashes; and several hundred tons of whiskey. The Lord only knows where this last article came from—we claim no credit for having manufactured it. There were from seventy to one hundred canal boats employed in the commerce of the county for the last year, of the average value of \$500 each. Without going more into particulars, the exports are known to have exceeded one million five hundred thousand dollars; and the imports more than one million of dollars in value. And I am authorized from authority that admits of no doubt, to say that the commerce of the county of Tompkins pays at least one-tenth of all the tolls received upon the Erie canal, besides what finds an outlet through the Seneca Lake. Part of the town of Hector, embracing a coast upon the Seneca Lake, of about ten miles, a densely populated, fertile and delightful country, sends its produce and receives much of its imports through that Lake, and pays its tolls at the Geneva Office.

The village of Ithaca is compactly built, mostly inhabited by respectable and thriving mechanics; and almost all the various articles required by the surrounding country, are there manufactured. It has several handsome public buildings. As an evidence of its comparative importance, I can state, that on some days of each week, fifteen mails are opened and closed, five daily stages arrive and depart, beside several three times, twice, and once a-week; a steamboat also traverses the Lake daily.

The stockholders may, for themselves, judge what will be the probable receipts on a road over which a large portion of the business which pays one-tenth of the tolls of the Erie Canal will pass.

A STOCKHOLDER.

New-York, March 10th.

ANIMAL WEATHER GLASS.—In Germany there will be found, in many country houses, an amusing application of zoological know-

ledge, for the purpose of prognosticating the weather. Two frogs are kept in a glass jar, about eighteen inches in height, and six in diameter, with the depth of three or four inches of water at the bottom, and a small ladder reaching to the top of the jar. On the approach of the dry weather, the frogs mount the ladder—but when wet weather is expected, they descend into the water. These animals are of a bright green.

AMERICAN FISHERIES.—In a recent number, we gave some interesting facts relative to the American Whale Fishery, which we are pleased to learn has been well received and extensively copied. The Whale Fishery is a very important part of our national industry, but the Cod and Herring departments of our fisheries are by no means of small consequence. As early as 1504, vessels from Biscay, Bretagne, and Normandy, were employed in the Cod Fishery on the coasts of Newfoundland. In 1507, the French, Spanish, and Portuguese, had vessels in this lucrative trade. In 1615, the number of British increased to 250; those of other nations to 400. The pilgrim fathers of New-England were obliged to draw their first support from the sea, and then began from necessity, and was continued for profit. Previously to the American Revolution, the Cod Fishers of Massachusetts employed 28,000 tons of shipping and 4000 seamen. The annual value of their industry and enterprise was about 1,000,000 dollars.

The absurd restrictions by which Lord North attempted to deprive the Colonies of their fishing rights are well known, as also the indignant exclamation of Burke against such arbitrary conduct. The struggle which followed was, of course, injurious to this, as to all other branches of national industry, but with the peace it again revived. In 1790, Massachusetts made a representation to Congress, asking some encouragement, in the form of bounty on exported fish, which was granted, and the trade rapidly increasing in consequence of this stimulus, in 1807, 71,000 tons of shipping were employed in the Cod Fishery alone, and the exports for that and the four preceding years averaged 3,000,000 dollars.

The disputes with Great Britain respecting the orders in council gave a new check to this trade, which was, however, only temporary, for the very year after the peace was concluded, we find 68,000 tons, employing 10,000 fishermen, on the ocean; since then there has been a constant increase, so that in 1831, in the Barnstable district alone, licenses were granted to 188 vessels, averaging 58 to 100 tons each, manned by about 1000 men and boys, the gross proceeds of which fishery were estimated at 319,000. The quantity of Cod thus annually destroyed is immense, but it is more than counterbalanced by their powers of reproduction, the roes of a single female being calculated to contain more than 9,000,000 eggs.

Mackerel, from the immense numbers which are annually taken, off Massachusetts, furnish a most important part of American trade, thousands and hundreds of thousands of barrels being annually sent to the West Indies. In 1803, the Legislature of Massachusetts passed a law for an inspection of fish. The following table will exhibit the surprising alterations, and amazing extent of this important business. The number of vessels employed in 1831 did not fall short of 400; number of men, 4000. The probable

value of the proceeds of the Mackerel Fishery, for that year, exceeded a million and a half of dollars.

In 1803 the number of barrels was 8,079½

1805	8,936½	1818	47,210
1806	8,473	1819	105,433
1807	10,904½	1820	236,243
1808	7,738½	1821	111,009½
1809	8,865½	1822	160,294½
1810	13,058½	1823	145,006
1811*	19,632	1824	191,650½
1812	5,018½	1825	254,381½
1813	3,822½	1826	158,740½
1814	1,349	1827	196,310
1815 12 th	16,349½	1828	237,324½
1816	30,021	1829	225,882
1817	37,982	1830	309,462

Herrings are also an important article: they are certainly migratory, though their migrations may have been overruled. Their taking, it is said, the regular circuit of the sea, gives interest to their history: one immense army leave the Polar regions in the spring, equalling in extent the whole surface of Great Britain. As they advance, squadrons begin to separate from the main body. By September, England, Ireland, and Scotland are surrounded by them. From these parts, the forces move South-West, across the Atlantic, and make their appearance on the coast of Georgia about the last of January; detachments then begin to move eastward, till ultimately the whole coast of North America is lined with them, furnishing food for great numbers.—[Maryland P. Cou't.]

* The first year after the division of the state from Maine.

COMPRESSION OF WATER.—Mr. Jacob Perkins has invented an apparatus, which, by hydrostatic pressure, compresses water to an extent equal to a fourteenth part of its volume. The force employed is equivalent to a pressure of 30,000 lbs. to the square inch, and is applicable to other fluids. In most of our works on natural philosophy, water is treated as incompressible and non-elastic; by this apparatus the opposite of these two propositions is clearly shown. There was a considerable difficulty in getting a vessel capable of resisting so high a pressure; and the chief feature of this instrument is the manner of constructing the cylinder, which is formed of a series of concentric tubes: thus the inner or smaller tube is first formed by welding, and is turned accurately on the outer surface; the next tube is then formed, and is accurately turned on the inner surface, and the bore of this second or outer tube is just too small to receive the first tube, but, in order that it may do so, it is heated, till, by expansion, it is capable of receiving the first tube within it, and in cooling, the second tube shrinks on the first tube and strongly embraces them together; a third tube, a fourth, and so on, are similarly put on, till a cylinder is produced capable of withstanding any pressure.—[Repertory of Patent Inventions.]

IMITATION OF GOLD.—"A Chemist," of Washington City, publishes the following recipe for a preparation, which, applied to iron, will make it look like gold:

"Take of linseed oil, three ounces; tartar, two ounces; yolk of eggs, boiled hard and beaten, two ounces; aloes, half an ounce; saffron, five grains; turmeric, two grains. Boil all these ingredients in an earthen vessel, and with it wash the iron, and it will look like gold. If there be not linseed oil enough you may put in more."

DOMESTIC SILK HANDKERCHIEFS, the product of the native mulberry, have been manufactured in Dayton, Ohio, which are said to exceed the imported ones in durability.

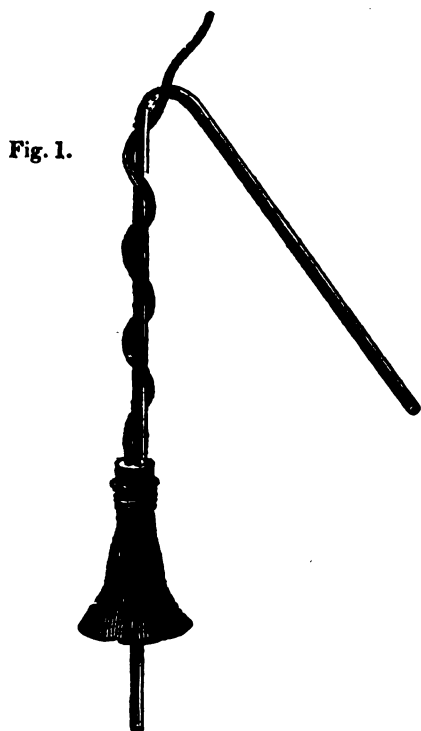


Fig. 1.

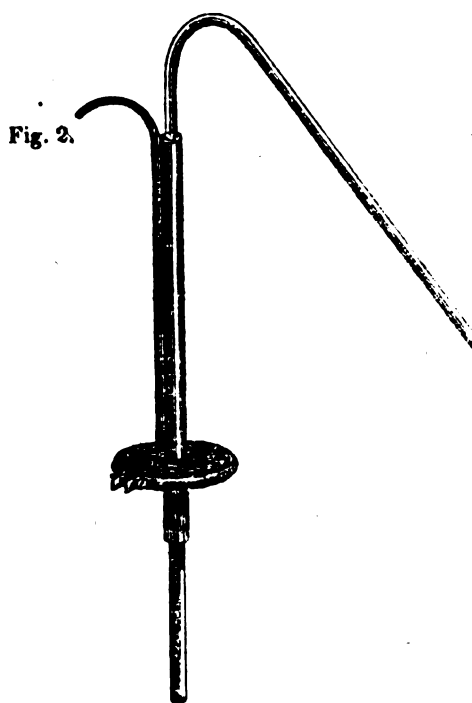


Fig. 2.

Improved Syphons. By R. HARR, M. D., Professor of Chemistry in the University of Pennsylvania. [Communicated by the Author.]

Annexed are engravings of two syphons, which I have found useful in my laboratory. Of these, one represents the more complete method of execution; the other, that which can be more easily resorted to by chemists in general, who have no easy access to skilful workmen.

The construction last alluded to is represented by fig. 1. A cork is perforated in two places parallel to the axis. Through one of the perforations the longer leg of the syphon passes; into the other, one end of a small lead tube is inserted. In order to support this tube, it is wound about the syphon until it approaches the summit, where a portion, of about three or four inches in length, is left free, so that advantage may be taken of its flexibility to bend it into a situation convenient for applying the lips to the orifice. About the cork, the neck of a stout gum elastic bag is tied air tight. The joinings of the tubes with the cork must also be air tight. The lower half of the gum elastic bag is removed, as represented.

In order to put this syphon into operation, a bottle must be used, having a neck and mouth of such dimensions as to form an air tight juncture with the bag when pressed into it. This object being accomplished, the air must be inhaled from the bottle until the diminution of pressure causes the liquid to come over and fill the syphon. After this, on releasing the neck of the bottle, the current continues, as when established in any other way.

Fig. 2 represents the more complete construction. In this are two metal tubes, passing through perforations made for them in a brass disc, turned quite true. Through one of these tubes, which is by much the larger, the syphon passes, and is cemented air tight. The other answers the purpose of the leaden tube described in the preceding article. The brass disc is covered by a piece of gum elastic, which may be obtained by dividing a bag of proper dimensions. The covering thus procured is kept in its place by a brass band

or clasp, made to embrace both it and the circumference of the plate, and to fasten by means of a screw.

Before applying the caoutchouc, it was softened by soaking it in ether, and a hole, obviously necessary, was made in the centre by a hollow punch.

There is no difference between operating with this syphon, and that described in the preceding article, excepting that the juncture of the syphon with the bottle is effected by pressing the orifice of the latter against the disc covered with gum elastic.

DESCRIPTION OF THE VOCAL ORGANS.—[We are allowed to extract the following description of one of the most interesting parts of the human frame, from the Anatomical Class Book, by Dr. J. V. C. Smith, —the pioneer, we believe, of popular textbooks on this subject.]

By voice, animals have the power of making themselves understood to their own species—and these sounds are either *articulate* or *inarticulate*.

Language is an acquired power, having its origin in the wants of more than one individual. Man, without society, would only utter a natural cry, which sound would express nothing but pain.

Supposing a human being to have been entirely forsaken by those of his species, in that state of infancy when he could have no recollection of any thing pertaining to his race, his voice would, in essence, remain the cry of an infant, only strengthened in tone, at a particular age, by the development of the vocal organs to their destined size.

But let two individuals be placed together, but without communication or knowledge of the existence of beings similar to themselves, the natural cry of each would undergo modifications: the one would make a sound, to express a particular sensation, which in time would be understood by the other: a repetition of the same note would be the sign of that sensation in future.

An additional sensation, having an intimate connection with the first, would require a variation of tone,—and this would also be

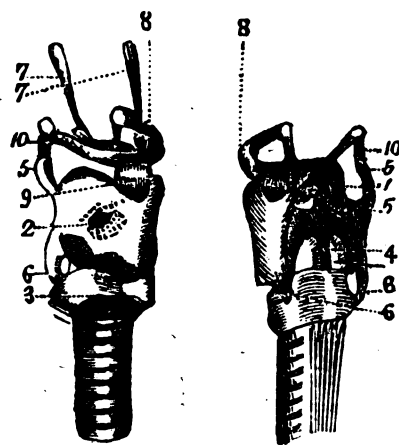
come a symbol of two sensations. Here then would be the origin of language. Multiply the species, and each new member of the society would express some other sensation or want, by another modification of the original cry. Here we discover the certain commencement of a spoken language; these different sounds becoming classified, constitute a dictionary, in which each word is the mark or sign of particular sounds; thus, if an individual can imitate the sound, or a series of sounds, he masters a language. Let it be remembered that man could never arrive to this perfection in sound or language, if his vocal organs were not differently constructed from brutes. Such is the mechanism of theirs, that so many sounds, and no more, can be made; but in man's organs, there is no limitation—no sound appreciable that he cannot imitate.

The Vocal Box, or Larynx.—Directly under the integuments on the front side of the neck, is a cartilaginous tube, the *trachea*, or wind-pipe, built up of a series of narrow strips, which are portions of a ring; therefore, it is always kept free and open. At its lower end it divides into two branches, going to the lungs on either side, but its upper portion is enlarged, just under the chin, and finally opens in common with the tube of the stomach and mouth. This enlarged part, quite prominent in man, is the *larynx* or vocal organ.

Several cartilages assist in its formation, viz., the *thyroid*, *cricoid*, the *arytænoïd*, and the *epiglottis*. The cricoid is the foundation; the thyroid is the wall around it; the arytænoïd are appendages to the back of the cricoid; and the epiglottis is a valve, opening and closing the entrance into the windpipe, like the valve of a bellows.

Fig. 1.

Fig. 2.



Explanation of figures 1, 2.—The five cartilages are—1, the epiglottis; 2, the thyroid cartilage; 3, the cricoid auxiliary; and 4, the two arytænoïd cartilages; 5, the two superior horns of the thyroid cartilage; 6, the two inferior horns; 7, the suspensory ligament of the os hyoides; 8, the os hyoides; 9, the azygos ligament, connecting the os hyoides to the thyroid cartilage; 10, the two lateral ligaments connecting the horns of the os hyoides to the superior horns of the thyroid cartilage.

One of these diagrams presents a front and the other a back view of the *larynx* or vocal box. The bone of the tongue is seen, like half of a hoop, marked 8, in both plans. 2 is the front of the *thyroid cartilage*, felt under the skin—protruding in the form of an irregular tumor. The wind-pipe is the tube

at the bottom of each larynx. The *vocal cords*—the membranes which vibrate to produce sound, as the current of air rushes by—are concealed, being placed inside. From the remarks in the text, together with the references, a very correct idea will be formed of the structure of this curious organ. By blowing through the wind-pipe of almost any animal, soon after it is slain, provided the larynx has not been injured, the vocal cords may be put in motion, and the sound which is produced will bear considerable analogy to the natural voice of the animal.

Within the larynx, and consequently below the valve, are four delicate membranes, two on each side, put upon the stretch—being, in fact, like shelves—their thin edges nearly meeting from the opposite sides, so that there is scarcely any space between them. These are the vocal cords.

When the air rushes out from the lungs through the wind-pipe, it must obviously pass through the larynx,—in doing which it strikes the tense edges of the cords, and produces a vibration. This vibratory motion given to the current of air produces sound. In the cavities of the bones of the face, forehead and nose, its power is increased, and in the mouth it undergoes further modifications, and ultimately becomes articulate language. The teeth, tongue, lips, nose and fauces, have each an influence in the production of articulate sounds. Hence grammarians have arranged the human voice under the appropriate divisions of *guttural*, *nasal*, *dental* and *labial* sounds,—expressive of the agency which each of these organs exert on the original tone.

Shrillness or roughness of voice depends on the diameter of the larynx,—its elasticity, lubricity, and the force with which the expired air is propelled through the *rima glottidis*, or slit-like chink, between the vocal cords.

It is because the larynx is smaller in women, and more elastic, that their voice is of a different character. The breaking of the voice, (*vox rauca*), noticeable in boys, at a peculiar age, depends partly on the enlargement of the apartments within the bones, which generally takes place at that important crisis of their lives, when the whole constitution undergoes a sudden change.

But the mechanism of voice would have been incomplete, were there not a number of exceedingly delicate muscles, which graduate the diameter of the narrow slit through which the sound escapes into the mouth. Unconsciously, they effect the requisite contractions, forever varying, according to the rapidity, intensity, or strength of the voice, in singing, conversation, or declamation.

Finally, the larynx is a musical wind-instrument, of the *reeded* kind, on the principle of the hautboy. The nearness of the vocal cords to each other resembles the reed precisely. All the tones of reeded instruments are effected by finger holes,—but the tones of the human voice are varied by the extrinsic and intrinsic muscles, which shorten or elongate the vocal tube. Thus the same result is produced by this process,—increasing or diminishing the diameter of the larynx, that is accomplished in the clarinet, bassoon, flute and hautboy, by a graduated scale of finger holes.

Is not this another beautiful mechanical evidence of the existence of a Being superior to ourselves!

AGRICULTURE, &c.

[From the New-York Farmer.]

MANAGEMENT OF BEES IN CASHMERE.—Those who take an interest in the rearing of bees will not be deterred from reading this article on account of its length.

Every farmer in Cashmere has several beehives in his house, and in some houses I have counted as many as ten. A provision is made for these in building the house, by leaving appropriate cavities in the wall, and which somewhat differ in size, but agree in their general form, each being cylindrical, and extending quite through the wall. The tube thus formed is lined by a plastering of clay mortar, about an inch in thickness, and the mortar is worked up with the chaff or husk of rice, or the down of thistles, which latter is employed for clay mortar in general, being the first application of this substance to the use of man I have yet witnessed. The dimensions of a hive are, on an average, about fourteen inches in diameter, and when closed at both ends, about twenty or twenty-two inches in length. The end of the cylinder nearest the apartment is closed by a round plaster of red pottery ware, a little convex in the middle, but with the edges made flush with the wall by a luting of clay mortar, and the other extremity is shut by a similar disk, having a circular hole about a third of an inch in diameter in the centre. It does not appear that there is any particular rule for the height of these hives from the ground, as they are sometimes confined to the walls of the lower basement story, generally appropriated to cattle in the farm-houses of Cashmere; others are inserted into those of the first floor, and are frequently in both situations in the same house, as well as the walls of its outbuildings. So great difference exists between the practice ordinarily pursued in Cashmere and in Europe, in respect to living new swarms when the honey is taken, that it deserves imitation. Although the season for taking the honey had passed when I visited Cashmere, in the beginning of November, the cottagers indulged my wish of seeing the process by which this was effected, but with little injury to the bees and with perfect safety to the individuals concerned in its management, and which was as follows:—Having in readiness a wisp of dry straw, and a small quantity of burning charcoal in an earthen dish, the master of the house, with a few strokes of the point of the sickle, disengaged the inner plaster of the hive, bringing into view the combs suspended from the roof of the hive, and almost wholly covered with bees, none of which, however, offered to resent the aggression, or to enter the room. Having placed the straw upon the charcoal, and holding the dish close to the mouth of the hive, he blew the smoke strongly against the combs, but removed the dish the instant the straw took fire, to prevent it burning the bees, and quenched the flame before he employed it again. Almost stifled by the smoke, the bees hurried out of the outer door with such rapidity, that the hive was cleared of its inhabitants within a few minutes, when the farmer, introducing the sickle, cut down the combs nearest to him, which were secured into a dish previously slid under them, and left undisturbed about one-third of the combs, which were almost close to the outer door. He then re-plastered the inner plaster, and brushing off hastily a few bees that clung to the combs, though apparently in a state of stupefaction, threw them out of the house. Observing many other bees lying motionless on the floor of the hive, I inquired whether they were dead or only stupefied, and was answered that they would recover; preparations for continuing my journey at a very early hour on the following morning, having unluckily prevented my examining the spot where they had been thrown out, until poultry had for some time been feeding near it. The expelled bees returned as soon as the

cavity was freed from smoke, without stinging a single individual, and the whole business was completed in less than ten minutes, without, as was asserted, any perceptible loss. The honey was light-colored, and of a taste as pure and sweet as that of Narbonne. It possessed less of the cloying quality generally attending this substance, than any other I recollect to have met with; nor could I learn that the farmer had any suspicion of its ever being intoxicating or poisonous, as in the case occasionally with that made by the Bhoura (*Apis irritabilis*), or large wild bee in the northern mountains of Gurwhal, from feeding, as it is reported, on the flower of the monkhood. I was directed more particularly to inquire upon this subject, by having observed this plant in flower in the valley of Bunga, a few miles to the eastward of the bee district, and think probable that it extends to these mountains. The peasantry of Cashmere are unacquainted with the employment of honey as the basis of a fermented liquor, but eat it raw or mixed with articles of common food, whilst the most wealthy substitute it for sugar in preserving fruits. It is customary to take the hive every year; about the end of September or beginning of October is found the best season for this operation, a little time still remaining for the bees to add to the portion left for their support during five months. This amounts to about one-third of the whole produce, and would appear to suffice, as swarms seldom die, and the Cashmeres substitute no other article of food. It is stated that an old swarm yields more honey than a young one, and that families seldom die except of old age. I was informed that it was no uncommon circumstance to preserve the same community for ten or even fifteen years; and some instances were quoted of a family having been retained for twenty years; but this was held to be a very rare occurrence. In consequence of the bees being thus literally domesticated, they acquire a mildness of conduct far more decided than those of Europe; and it is possible that the confidence thus gained, subduing their natural irascibility, may generate an increase of industry, or at least an increase of produce in relation to the number and size of the individuals of each community. It is also clear, that the situation of the hive keeps many of the natural enemies of the bees at a distance. The bee of Cashmere is a little smaller than that of Europe, though a little larger than the domesticated bee of Kumavon and of Gurwhal. The Bhoura, the rock bee of Gurwhal, or the bee of the southern mountains, is, on the other hand, greatly larger than the domesticated bee of Europe, and greatly exceeds it also in the number of individuals in each community, and in the size and weight of its combs. But its honey is sometimes contaminated by an intoxicating quality, and the temper of the insect is so irritable, as to be brought into a dangerous state of activity by a slight show of aggression. The former quality is suspected, upon probable grounds, to be caused by the secretion of the aconite eaten by the bee, and its irritability of disposition to be owing partly to the exposed situation of the combs suspended from the lower surface of a ledge of rock, and partly to the occasional attempts of bears to carry them off. But these deductions from the merits of this bee are merely the result of localities; and under due precautions, it is presumed its irascibility might be so far subdued as to render it just as safe an inhabitant of a wall-hive as the smaller variety of bee. In a portion of the Punjab, near the hills, this bee is also met with; and I have seen the under surface of the principal branches of a large Peepul tree studded with so many colonies, individually of such great strength as to deter the neighboring peasantry from attempting to deprive them of their stores, notwithstanding it was conjectured that there were several hundred weight of combs on the tree. The largest of these assemblages of combs—the probable accumulation of many

seasons—was of such a size as I think it not prudent to cite; but from the specimens I have seen of the produce of this bee, I conceive their domestication, if introduced into Europe, would prove a most valuable acquisition to this branch of farming, although I must confess myself unable to devise any safe and easy plan for transporting such a colony.—[Mr. William Moorcroft in the Journal of the Royal Geographical Society.]

ITALIAN RYE GRASS.—In the 'Transactions of the Highland Society, we find an article on this subject, by Mr. Charles Lawson:

This plant is said to be distinguished from the common rye grass (*Lolium perenne*), by its larger leaves, by its being of a deeper green, and by the greater height to which it grows. It is usually sown in autumn, as is the general practice with grass seeds in the south of Europe. After the field is harrowed, it is sown at the rate of from 16 to 18 lbs. per acre, and the seed rolled in. In the following autumn, the turf is covered like an old meadow, and the crop of the following year is more than double. It may be also sown in spring. If it be sown with clover or lucerne, its growth is so rapid, that it will quickly choke them. It is eaten greedily by cattle, whether green or dry, and yields fifty per cent. of hay.—[Bulletin des Sciences Agricoles.]

USE OF THE ROLLER.—A very small proportion of the farmers in Western New-York are provided with this valuable implement, and I am confident that very few of them would be without it, if they knew its value.

When my wheat came up in the autumn of 1832, I discovered that in one field my hired man had not sowed it evenly; but it was then, as I thought, too late to remedy it. In the spring it presented the same unpromising appearance, being so thin in many places that I anticipated a short crop. Being disappointed in receiving my clover seed for the same field as early as I wished, I was apprehensive of a failure in that also, and to prevent it, directed my son to roll the field. Witnessing the effect, in completely pulverising the crust which had formed on its surface, I was led to conclude that the operation had not only placed the clover seed in a favorable situation to vegetate, but would benefit my wheat also; and therefore directed the residue of my wheat to be rolled. Business called me from home for several weeks, and on my return was astonished to find that my wheat had spread so as to stand nearly as thick as I wished; and at harvest it appeared to be perfectly even, and produced a fine crop. I think that I must have gained by rolling at least one-fourth. My clover seed took well.

Last spring I rolled after sowing and harrowing my oats, which came up very soon and regularly and produced a heavy crop.

The past autumn I rolled one wheat field immediately after harrowing, and I think it came up more equally and sooner for the operation. I have also rolled a part of two other fields, in order to ascertain whether rolling in autumn is beneficial to the wheat, the result of which I may hereafter communicate. The only doubt I have as to its utility, arises from the belief that snow lying on wheat is advantageous, and a fear that rolling the ground will cause it to be more easily blown off. The above mentioned trial of rolling in the spring is conclusive as to its benefits at that season. Another benefit resulting is, that the ground is left in so smooth a state that the crop is much easier cut, and gathered with less waste.

I have also experienced great benefit from the use of the roller on green sward ploughed in the fall, and left in a rough state through the winter. By passing the roller over it previous to harrowing, the inequalities are removed, and the operation of harrowing rendered much more effective.

I am led to believe that in all cases where

green sward is turned under for a crop, rolling must be beneficial, even when it is to be a naked fallow, closing the interstices, and the compression having the effect to produce a more equable and thorough decomposition of the sward.

The effect of a roller on mowing grounds is to enable the mower to cut the grass closer, and to prepare the land for the use of the horse-rake: an implement which, with a horse and boy, will do the work of six men.

Now is the time for every farmer not already furnished with a roller, to procure a stick of heavy white oak, two to two and a half feet diameter, and six feet long; use gudgeons made of one and a half inch iron; drive them in the centre of the stick, then raise it so that the gudgeons will rest on blocks, when there will be no difficulty in bringing it to the shape of an exact cylinder. All that remains to be done is to make a stout frame and tongue, the latter well braced.—[Gen. Far.]

NATIVE GRAPES.—The following is the testimony of N. Longworth, Esq., one of the most extensive vine growers in this country:

The Catawba is superior as a wine and table grape to the Isabella, and matures its fruit better, though a less abundant bearer. We have native grapes in most of our states, could a selection be made, that would leave us little cause to regret that foreign grapes succeed so badly with us.

DAIRY HUSBANDRY OF HOLLAND.—Some idea may be formed of the great importance and extent of the dairy husbandry in Holland, by examining the official returns of importation into this kingdom. In the year ending 5th January, 1830, it appears that out of 148,164 cwt. of butter imported from foreign countries, 116,233 cwt. were imported from Holland; and of 168,900 cwt. cheese, 167,913 cwt. were imported from that country. The duty alone on these two articles from Holland, at 20s. per cwt. on butter, and 10s. 6d. on cheese, amounted to £204,386, and these quantities must have cost the consumers, the butter, £523,048; the cheese, £292,282; total, £815,330.—[Mr. Mitchell on the Dairy Husbandry in Holland.]

SUBSTITUTE FOR SWEET POTATOES.—The cocoanut squash, cut into pieces, and roasted like sweet potatoes, is found to be fully equal to them, and so closely to resemble them in flavor that it would be difficult to distinguish between them. It grows freely in this climate, and may be kept till mid-winter.—[Goodsell's Farmer.]

CULTURE OF SILK.—Wednesday, in the House, the bill to encourage the cultivation of Mulberry Trees and the production of Silk was passed to a third reading. This bill gives a bounty of two dollars for every hundred of trees set out at the rate of 600 to the acre, and one dollar for every pound of domestic reeled silk. The consideration of the above bill was attended by a very interesting debate, in which the following gentlemen took part: Messrs. Gray, Moseley, Rockwell, Enstis, Thayer, Chapman, Forward, M'Kay, Lincoln, and Kinsman. Mr. Moseley communicated much interesting information. He stated that the mulberry tree would grow in any country between 20 and 50 degrees of latitude—that sandy and gravelly soil suited it best—that the required labor could be performed by children—and that 600 lbs. of silk, worth \$3 per lb., could be obtained from the worms fed on the trees which could be raised on one acre of ground.

Mr. Chapman, of Greenfield, who opposed the bill, made some judicious remarks as to such articles as are ornamental, and such as are useful. But the question was not whether our people had better wear silk, but whether,

if they will wear it, it is best that a good part of it should be produced in this country, or that nearly the whole should be imported. He wished our farmers' wives and daughters should be able to procure silks at 50 cents a yard, rather than at a dollar. Domestic competition may effect this. But, if we do not choose to wear silk, we may produce it to export.—[N. E. Farmer.]

SOIL AND AGRICULTURE IN OHIO.—The bottom lands are low and subject to occasional floodings, but are of a very rich soil. Pickaway county is nearly square in outline, being twenty-two by twenty-one miles in extent, and contains sixteen thousand inhabitants. The Scioto river passes through it from N. to S. dividing it into two nearly equal portions. The lands on the east side are of a very excellent quality, and produce all the different kinds of grain in the most luxuriant abundance. The county contains four varieties of soils, wood lands, barrens, plains and prairies. On suitable soils, from forty to forty-five bushels of wheat are produced, and in early days, before the rich prairies were reduced by successive crops, one hundred bushels of corn per acre were not uncommon. By the rich farmers, cultivation is carried on in a style and grandeur proportionate to the exuberance of the crops. Fields of one hundred acres of wheat, or of corn, are often seen, and frequently they are extended to three or four hundred. A few years since, when wheat commanded a dollar per bushel, a rich farmer on the Pickaway plains cultivated one thousand acres in a single field, which, when undulating under a gentle breeze, might not unaptly be called an ocean of verdure. In all the counties bordering on the canal, there has, since it was opened, been an increase in the value of wheat of from ten to fifteen cents per bushel, and so of many other articles: the canal giving them the advantage of the New-York markets, whereas, before, they had only that of the Mississippi.—[Silliman's Journal.]

APPLICATION OF STEAM TO AGRICULTURE.

—We hope the day will never come when there shall be so much ignorance and prejudice in this country that our farmers will be in that condition mentioned in the last sentence of the following paragraph, taken from the London Gardener's Magazine.

The application of steam to agricultural purposes is said to have lately called forth a powerful and effective engine in France; and it has at the same time produced a steam digging machine in England. This engine, an imperfect model of which we saw three years ago, has lately been so far improved that a patent has been taken out for it by Mr. Philips. It will be found figured and described in Gordon's Journal of Locomotion, for February, 1833. We have lately seen the model of another machine, which may be applied to the same purpose, and, as it appears to us, with much greater chance of success. At one operation it could be made to plough, pulverize, roll, sow, and harrow, a breadth of 10 feet or 12 feet, at the rate of 5 or 6 miles, and consequently between 7 and 8 acres per hour. The machine might, no doubt, be impelled at double that rate; but it is questionable whether at such a velocity the work of sowing could be properly performed. The present, however, is not the time for bringing out such a machine in

England, where the farmers, in most districts, are obliged to take down and conceal the wheels of their threshing machines, if these have not been already burned by their laborers.

CHINESE ROSES may be propagated from single buds, as grape vines are propagated. The single bud, with a quarter of an inch of the stem, both above and below it, is placed just under the soil, under a bell-glass; the leafstalks and leaves standing upright as in a cutting. A single bud of *Rosa semper-florens sanguinea* was planted on July 26, and on September 8. October 9 it was six inches high, and side shoots were being produced.—[Charles M. Willich, London, Oct. 3, 1833.]

GYPSUM.—The editor of the Farmer's Register says he has found gypsum very efficacious on a soil which, before it had been marled, exhibited no beneficial effects.

MANURE IN DRY SEASONS.—Dr. J. P. Beekman, of Kinderhook, in writing to the editor of the Farmer's Register, says, "There is an ameliorating and fructifying quality about the sod that imparts its powers to the grain that succeeds it, which is not discernible in the properties of the manure; and in dry seasons the effects of this last are *almost entirely lost*." We should be pleased to learn from Dr. Beekman, whether this manure was properly fermented, or in its coarse unrotted state? It seems to us a subject of much importance to avoid this loss of manure and time.

Suggestions relative to Gardeners' Work for March. By the EDITOR.

The month of March, like a fickle and inconstant person, is neither admired nor loved. Sometimes, indeed, it puts on a cheering and smiling aspect, inviting us to visit its lawns and its promenades, and to listen to the first notes of spring music. Again, all is chill and gloom; no cordiality, no welcome reception, but all is forbidding and stormy. Its character being known, very little is expected from it; and consequently, most people are on their guard against its fickleness and deceptive appearances. Most gardeners venture to do little more than to make diligent preparations for the more mild, uniform, and lovely April.

In reference to early and late sowing, we refer our readers to the article in this number, page 66. Although late sowing may insure greater crops, yet, after a long winter, it is very desirable and very natural to have early vegetables. Should March be proportionably mild, as the past February has been, vegetation will be some ten or fifteen days earlier than usual. The seeds of many kinds of vegetables may be put in boxes and pots, and placed in the kitchen, or other warm situations; and when the season is sufficiently advanced, the young plants should be removed with the dirt or soil into the ground in the open air. Peas may very easily be advanced in this way. Some plant their peas, beans, and potatoes, on inverted sods of earth, placed in convenient boxes, and kept moist. When the time arrives to transplant them into the garden, the sods are easily taken up with growing vegetable, and properly placed in their permanent place.

RHUBARB, *Rheum rhabarbarum*.—Those who have this vegetable should, if they have

not done it before, place over each plant a barrel, or large box, which, if covered with heating horse manure, will soon cause them to grow and be beautifully blanched. In the latter part of the month, or early in April, the leaves will be sufficiently large for making the much admired rhubarb pies.

TRANSPLANTING.—As soon as the ground is thawed, those who conveniently can, should begin to transplant. It is much better to commence early this month than to run the risk of delaying until vegetation starts. Those who are desirous to have fruit trees already in bearing, and their premises embellished with sizeable ornamental trees, should immediately undertake the business.

MANURE.—Whatever diversity of opinion may be entertained respecting rotted and unrotted manure in field culture, there should be none in reference to garden operations. Let the manure be well fermented and in a moist state, particularly in a sandy soil. A more uniform growth and greater certainty of maturity are the consequences of using fermented manures. For flowers and vegetables, bone manure has advantages.

Cultivation of Peach Trees. By D. B. [For the New-York Farmer and American Gardener's Magazine.]

In the New-York Farmer for January, page 2, is an article on the cultivation of the peach tree, by R. H. B., in which he says that "peach trees may be preserved by good management, twenty, and probably forty or fifty years." Whether it be true, as he asserts, that the peach tree is "destroyed by a worm which feeds on the inner bark of the tree, at its root," I am not about to admit or deny. If, however, it is true, as he asserts, "that the peach tree, if the worm is kept out of the root, will live at least twenty years; and that this may certainly be done by attacking them the first year of its growth, and continuing to extract them for three or four years in succession," it would seem that any means by which a "lodgment" of the worm in the "inner bark of the tree could be prevented, would conduce more to the general health and vigorous growth of the tree than any attack upon them, after, a "lodgment" was once effected, could possibly do. Now, my object is not controversy, but to suggest to R. H. B., and others, what I deem an effectual method of preventing a "lodgment" of the worm in the "inner bark of the tree." Previous to 1832 I had made repeated trials to cultivate the peach tree, with the same uniform ill success. Till the second or third, and sometimes till the fourth year, my trees were healthy and their growth vigorous, when they would begin to decline and soon die, and often without any apparent injury from the worm. From repeated failures, I had wholly abandoned their cultivation as hopeless. In the spring of that year a friend of mine, agent for the Messrs. —, had a lot of peach trees consigned to him for sale. They were offered for a time at private sale, and finally advertized to be sold at auction; but a part only could be sold, the trees having been out of the ground so long, and the season so far advanced that there remained no prospect of selling them. I had from the agent the offer of a bundle of the trees, and found them, as I supposed, refuse trees, probably taken from a part of the nursery which was to be cleared to make room for a new crop. Unpromising as they were, I made them the subjects of the follow-

ing experiment. A hole was dug, large enough to admit the roots in their natural position; after which, sufficient earth was hauled over the roots to cover the smaller ones, and support the tree in its position. A kettle of common tar was at hand, warmed so as to enable me to spread it freely over the larger roots, and up the body of the tree several inches above the surface of the ground. The holes were then filled with earth as usual. All the trees thus treated, (23 in number,) started, but the greater part of them, as I expected, from the unfavorable circumstances already related, died in the course of the summer. Those that survived the first summer, (8 or 10 in number,) have grown very vigorously, and are now apparently as healthy as any trees I have of any description. I have from time to time examined them, and, as often as appeared necessary, have removed the earth and made a fresh application of tar, and again replaced the earth. This is in no case necessary more than twice in a year, generally once is sufficient; and, perhaps, as a general rule, the fall would be the best season, if but one dressing was given in a year, for the reason that the winter would not perceptibly diminish the quantity; and if applied in the fall, would always be in season to prevent the early ravages of the worm.

Granting what R. H. B. assumes to be the fact, that the worm is the cause of the destruction of peach trees, it is certainly important, if possible, to prevent its ravages. He proposes a "remedy," which he says "consists in searching for the openings in the bark at the root, and taking them out." In this, as in every other case, preventive is better than "remedy." Let then R. H. B., and all others who would prevent a "lodgment" of the worm "at the roots" of their peach trees, try the application of tar as above directed; and if faithfully done, I hesitate not to say that the preventive will be found more effectual, and attended with less trouble, than the "remedy," and may, by wholly excluding the worm, help to settle the question, whether it is the cause of the decay of peach trees, or only a consequence of it.

D. B.
Ridgefield, Ct., February, 1834.

LOVE OF MUSIC BY SHEEP.—We were surrounded by a large flock of sheep which were leaving their fold to go to pasture; one of our party took his flute out of his pocket, and saying, "I am going to turn Corydon, let us see whether the sheep will recognize their pastor," began to play. The sheep and goats, which were following each other towards the mountain with their heads hanging down, raised them at the first sounds of the flute; and all, with a general and hasty movement, turned to the side from whence the agreeable noise proceeded. Gradually they flocked round the musician, and listened with motionless attention. He ceased playing; still the sheep did not stir. The shepherd with his staff obliged those nearest to him to move on. They obeyed; but no sooner did the fluter begin again, to play, than his innocent auditors returned to him. The shepherd, out of patience, pelted them with clods of earth, but not one of them would move. The fluter played with additional skill; the shepherd exasperated, whistled, swore, and pelted the fleecy amateurs with stones. Such as were hit by them began to march, but others still refused to stir. At last the shepherd was obliged to entreat our Orpheus to cease his magical sounds. The sheep then moved off, but continued to stop at a distance as often as our friend resumed his instrument.—[Vic de Haydn par Bombat.]

NEW-YORK AMERICAN.

MARCH 8-14, 1834.

LITERARY NOTICES.

Owing to the distant region in which our accomplished correspondent—whose letters under the initial H. have been so eagerly and justly sought after—is now travelling—as well as to the irregularity of the mails, we have no letter from him to present to-day.

We must add, too, that although we have on our table several interesting and valuable publications claiming notice, we are so absorbed in the all-important political discussions of the day, that we must for a while ask the indulgence, both of our literary readers and friendly publishers. We can only to-day speak of a few.

LETTERS OF MAJOR JACK DOWNING, 1 vol. New York: Harper & Brothers.—The celebrity of *Major Jack Downing* is not surpassed at this day in the U. States, by that of any individual, however exalted. The public voice has unanimously awarded to his letters the praise of a consistent graphic record of the acts and doings of the President and his advisers—which, without ever violating the unity of the old *General's* character, uses up, without stint, the interested speculators who betray his confidence.

This volume—which we need hardly say contains the letters originally published in the *Daily Advertiser*—is well printed, and illustrated with some amusing and spirited engravings.

HISTORY OF SCULPTURE, PAINTING AND ARCHITECTURE: by J. S. MEMES, L. L. D. 1 vol. Boston—CLAPP & BROADUS.

It is not without justice that we may claim as Americans to have already produced in our short career as a nation many remarkable painters—the names of some of whom will certainly live. In Sculpture we have been less distinguished; though Greenough, and Auger, and Frazee, are in that branch of the fine arts, too, winning renown; but in Architecture, all is blank with us. The bump of building, if phrenologists will allow us so to speak—we have abundantly; but that of architecture has not, to our knowledge, as yet been practically developed on any American head. Hence, we are gratified in seeing this number of *Constable's Miscellany* re-published in this country; and commend it to our readers in the persuasion that they will find it agreeable in its style and abounding in information imparted with good taste.—We have marked some extracts which at a future day we shall publish.

THE AMERICAN MONTHLY MAGAZINE, FOR MARCH.—We can give unstinted praise to this periodical—which goes on with talent, industry, and spirit; and we are glad to learn with increasing success. We copy part of a very spirited article—"passages of the Life of Mary Stuart." The ill-fated *Chastelar* having just discovered to Mary his love, and been indignantly dismissed—the scene is thus continued:

An hour had scarce elapsed, before the lights were extinguished throughout the vaulted halls of Holyrood; the guards were posted for the night, the officers had gone their rounds, the ladies of the royal circle were dismissed, and all was darkness and silence. In Mary's chamber a single lamp was burning in a small recess, before a beautifully executed painting of the virgin, but the light was not sufficient to penetrate the obscurity which reigned in the many angles and alcoves of that irregular apartment, although the moonbeams were admitted through the open casement.

Her garb of ceremony laid aside, her lovely shape sweetly veiled by a single robe of spotless linen, her auburn tresses flowing in unrestrained luxuriance almost to her feet, if she had been a creature of perfect human beauty when viewed in all the pomp of royal pageantry, she now appeared a being of supernatural loveliness. Her small white feet, unsandalled, glided over the rich carpet with a grace, which a slight degree of fancy might have deemed the motion peculiar to the inhabitants of ano-

ther world. For an instant, ere she turned to her repose, she leaned against the carved mullions of the window, and gazed pensively, and it might be, sadly, upon the garden, where she had so lately parted from the unhappy youth, whose life was thus embittered by that very feeling, which above all others should have been its consolation. Withdrawing her eyes from the moonlit scene, she knelt before the lamp and the shrine which it illuminated, and her whispered orisons arose, pure as the source from which they flowed—the prayers of a weak and humble mortal, penitent for every trivial error, breathing all confidence to Him, who can alone protect or pardon; the prayers of a Queen for her numerous children, and last and holiest of all, a woman's prayers for her unfortunate admirer. Yes, she prayed for *Chastelar*, that strength might be given to him from on high, to bear the crosses of a miserable life, and that by divine mercy the hopeless love might be uprooted from his breast. The words burst passionately from her lips, her whole form quivered with the excess of her emotion, and the big tears fell like rain from her uplifted eyes. While she was yet in the very flood of passion, a sigh was breathed so clearly audible, that the conviction flashed like lightning on her soul, that this most secret prayer was listened to by other ears than those of heavenly ministers. Terror, acute terror, took possession of her mind, banishing by its superior violence every less engrossing idea. She snatched the lamp from its niche—waved it slowly around the chamber, and there, in the most hallowed spot of her widowed chamber, a spy upon her unguarded moments, stood a dark figure. Even in that moment of astonishment and fear, as if by instinct, the beautiful instinct of purely female modesty, she snatched a velvet mantle from the seat on which it had been cast aside, and veiled her person even before she spoke—"Oh God it is *de Chastelar*."

"Sweet Queen,"—replied the intruder—"bright, beautiful ruler of my destinies, pardon—"

"What ho!"—she screamed in notes of dread intensity—"à moi à moi mes Français.—My guards!—Seyton—Carmichael—Fleming—will ye leave your Queen alone! alone with treachery and black dishonor!—Villain! Slave!"—she cried, turning her flashing eyes upon him, her whole form swelling as it were with all the fury of injured innocence—"didst thou dare to think that Mary—Mary, the wife of Francis—the anointed Queen of Scotland, would brook thine infamous addresses—Nay kneel not,—or I spurn thee—What ho! will no one aid in mine extremity—"

"Fear nought from me—" faltered the wretched *Chastelar*, but with a voice like that of some inspired Pythoness she broke in—"FEAR! think'at thou that I could fear a thing, an abject coward thing, like thee?—a wretch that would exult in the infamy of one whom he pretends to love. FEAR thee—by heavens, if I could have feared, contempt must have forbidden it."

"Nay—Mary—hear me! hear me but one word, if that word cost my life—"

Thy life—hadst thou ten thousand lives, they would be but a feather in the scale against thy monstrous villany. "What ho!"—again she cried, stamping with impatient anger at the delay of her attendants—"Treason! My guards—Treason!" At length the passages rang with the hurried footsteps of the startled inmates of the palace—with torch, and spear, and brandished blades, they rushed into the apartment—page, sentinel, and chamberlain, ladies, with dishevelled hair, and faces blanched with terror.—The Queen stood erect in the centre of the room, pointing with one white arm bare to the shoulder towards the wretched culprit, who with folded arms and head erect awaited his doom in unresisting silence. His naked rapier, with which alone he might have foiled the united efforts of his enemies, lay at his feet—his brow was white as sculptured marble, and no less rigid, but his eyes glared wildly, and his lips quivered as though he would have spoken. The Queen, still furious at the wrong which he had done her fame, marked the expression. "Silence!" she cried—"Degraded!—wouldst thou meanly beg thy forfeit life—Wert thou my father, thou shouldst die to-morrow!—Hence with the villain!—Bid Maitland execute the warrant—Ourselves—Ourselves will sign it—away! *Chastelar* dies at day break!"

"Tis well—" replied he calmly—"it is well—the lips I love the best pronounce my doom; and I die happy, since I die for Mary!—Wouldst thou but pity the offender, while thou dost doom the offence, *de Chastelar* would not exchange his shortened span of life, and violent death, for the brightest crown of Christendom. My limbs may die—my love will live for ever! Lead on minions—I am more glad to die,

than ye to slay!—Mary—Beautiful Mary—think! think hereafter upon *Chastelar*!"

The guards passed onward—last of the group, unfettered and unmoved, *de Chastelar* stalked after them. Once, ere he stooped beneath the low browed portal, he paused, placed both hands on his heart, bowed lowly and then pointed upwards, as he chanted once again the words *Pensez à moi—Noble Dame—Pensez à moi*. As he vanished from her presence, she waved her hand impatiently to be left alone—and all night long she traversed and re-traversed the floor of her chamber in paroxysms of the fiercest despair. The warrant was brought to her—silently, sternly, she traced her signature beneath it,—not a sign of sympathy was on her pallid features, not a tremor shook her frame; she was passionless, majestic, and unmoved. The secretary left the chamber on his fatal errand—and Mary was again a woman. Prostrate upon her couch she lay, sobbing and weeping as though her very soul was burning from her bosom, defying all consolation, spurning every offer at remedy. "'Tis done!" she would say—" 'Tis done!—I have preserved my fame, and murdered mine only friend."

The morning dawned slowly—and the heavy bells of all the churches clanged the death peal of *Chastelar*. The tramp of the cavalry defiling from the palace gates struck on her heart as though each hoof dashed on her bosom. An hour passed away—the minute bells still tolling—the roar of a culverin swept heavily downwards from the castle, and all was over!—He had died as he had lived, undaunted—as he had lived, devoted!—"Mary, Divine Mary,"—were his latest words—I love in death, as I have loved in life—thee and thee only." The axe drank his blood, and the Queen of Scotland had no a truer servant left behind, than he, whom for a moment's frenzy she was compelled to slay—yet was his last wish satisfied, for though the Queen might not relent, the woman did forgive, and, in many a mournful hour did Mary think on *Chastelar*. H.

LUCIA, THE BETROTHED, from the Italian of *Alessandro Manzoni*, 2 vols; New York, G. DRABORN.—This translation from a novel—if so we must call a work full of the finest developments of character, and tending to the highest moral aims—renowned in Italian literature, is a welcome contribution to our own. It furnishes a view of Italian manners and society in the commencement of the seventeenth century, of great power and interest; its historical details are curious and instructive; and in the extract we make, descriptive of a city laboring under the panic and sufferings of a pestilence, the vigor of the author's pen will be acknowledged and felt by all. It is a remarkable coincidence, that the same delusion which, during the plague of Milan in 1628-9, affrighted the populace with the idea that secret poisons were producing all the mischief, prevailed during the existence of the Cholera in Paris, more than two centuries afterwards, namely in 1832.

The translation is, throughout, faithful almost perhaps to a fault:

The council of ten then requested the cardinal to order a solemn procession, for the purpose of carrying through the streets the body of San Carlos.—The good prelate refused; this confidence in a doubtful means disturbed him, and he feared, if the effect should not be obtained, confidence would be converted into infidelity, and rebellion against God. He also feared that if there really were poisoners, this procession would be a favorable occasion for their machinations, and if there were not, so great a collection would have a tendency to spread the contagion.

The doors of public edifices and private houses had been again plastered with venomous substances; the news of the discovery flew from mouth to mouth; the people, embittered by present suffering, and irritated by the imminence of the danger, embraced the belief voluntarily; as the idea of subtle instantaneous poison was more than sufficient to explain the violence, and the most incomprehensible circumstances of the disease. Adding to it the idea of enchantment, by which any effect was possible, any objection rendered feeble, every difficulty was explained. If the effects did not immediately succeed the first attempt, the cause was easy to assign; it had been done by those to whom the art was new, and now that it was brought to perfection, the perpetrators were more confirmed in the infernal reso-

lution. If any one had dared to suggest its having been done in jest, or denied the existence of a black intrigue, he would have passed for an obstinate fool, if he had not incurred the suspicion of being himself engaged in the plot. With such persuasions on their minds, all were on the alert to discover the guilty; the most indifferent action excited suspicion, suspicion was changed to certainty, and certainty to rage.

As illustrations of this, the chroniclers cite two examples which we will relate.

In the church of Saint Antonio, on the day of some great solemnity, an old man, after having prayed for some time on his knees, rose to seat himself, and before doing so, wiped the dust from the bench with his handkerchief. "This old man poisons the bench," cried a woman, who beheld the action.—The crowd in the church threw themselves upon him, tore his white hair, and after beating him, drew him out half dead, to carry him to prison and to torture. "I saw the unfortunate man," says Ripamonti, "I never knew the end of his painful story, but at the time I thought he had but a few moments to live."

The other event occurred the next day, it was as remarkable, but not as fatal. Three young Frenchmen having come to visit Italy, and study its antiquities, had approached the cathedral, and in passing by, stopped; a circle was formed around them; they were not lost sight of for a moment, having been recognized as strangers, and especially Frenchmen. As if to assure themselves that the wall was marble, the young artists extended their hands to touch it. This was enough. In a moment they were surrounded, and with imprecations and blows dragged to prison. Happily however, they were proved to be innocent, and released.

These things were not confined to the city; the phrenzy was propagated equally with the contagion. The traveller encountered on the high road; the stranger whose habits or appearance were in any respect singular, were judged to be poisoners. At the first intelligence of a new comer, at the cry even of a child, the alarm bell was rung; and the unfortunates were assailed with showers of stones, or seized and conducted to prison. And thus the prison itself was, during a certain period, a place of safety.

Meanwhile, the council of ten, not silenced by the refusal of the wise prelate, again urged their request, which the people seconded by their clamors. The cardinal again resisted, but finding resistance useless, he finally yielded; he did more, he consented that the case which enclosed the relics of San Carlos, should be exposed for eight days on the high altar of the cathedral.

The Tribunal of Health, and the other authorities did not oppose this proceeding; they only ordained some precautions, which without obviating the danger, indicated too plainly their apprehensions. They issued severe orders to prevent people from abroad entering the city, and to ensure their execution, commanded the gates to be closed. They also nailed up the sequestered houses; "the number of which," says a contemporary writer, "amounted to about five hundred."

Three days were employed in preparation; on the 11th of June, the procession left the cathedral at day break; a long file of people, composed for the most part of women, their faces covered with silk masks, and many of them with bare feet, and clothed in sackcloth, appeared first. The tradesmen came next, preceded by their banners; the societies, in habits of various forms and colors; then the brotherhoods, then the secular clergy, each with the insignia of his rank, and holding a lighted torch in his hand. In the midst, amid the brilliant light of the torches, and the resounding echo of the canticles, the case advanced, covered with a rich canopy, and carried alternately by four Canons, sumptuously attired. Through the crystal were seen the mortal remains of the saint, clothed in postifical robes, and his head covered with a mitre. In his mutilated features might still be distinguished some traces of his former countenance, such as his portraits represent him, and such as some of the spectators remembered to have beheld and honored. Behind the remains of the holy prelate, and resembling him in merit, birth and dignity, as well as in his person, came the Archbishop Federigo. The rest of the clergy followed him, and with them the magistrates in their robes, then the nobility, some magnificently clothed, as if to do honor to the pomp of the celebration, and others as penitents, in mourning habits and bare feet; each one, however bearing a torch in his hand. A vast collection of people terminated the procession.

The streets were ornamented as on festival days;

the rich sent out their most precious furniture; and thus the fronts of the poorest houses were decorated by their more wealthy neighbors, or at the expense of the public. Here, in the place of hangings, and there, over the hangings themselves, were branches of trees; on all sides hung pictures, inscriptions, devices; on the balconies were displayed vases, rich antiquities, and valuable curiosities: with burning flambeaux scattered throughout. From many of these windows the sequestered sick looked upon the pomp, and mingled their prayers with the people as they passed. The procession returned to the cathedral about the middle of the day.

But the next day, whilst presumptuous confidence and fanatical assurance had taken possession of every mind, the number of deaths augmented in all parts of the city, in a progression so frightful, and in a manner so sudden, that none could avoid confessing the cause to have been the procession itself. However—astonishing and deplorable power of prejudice! this effect was not attributed to the assemblage of so many people, and to the multiplicity of fortuitous contact, but to the facility afforded to the poisoners to effect their infernal purposes. But as this opinion could not account for so vast a mortality, and as no traces of strange substances had been discovered on the passage of the procession, recourse was had to another invention, admitted by general opinion in Europe—magical and poisoned powders! It was asserted that these powders scattered profusely in the road, attached themselves to the skirts of the gowns, and to the feet of those, who had been on that day barefooted; thus the human mind delights itself with struggling under the weight of phantoms of its own creating.

We conclude the review—not inappropriately—with the following notice from a correspondent.

Mr. Editor:—I have before me a small pamphlet containing Professor Faraday's remarks on the prevention of Dry Rot in Timber. This is a subject almost as interesting here as in England, and from the facts stated, it seems that a remedy for this evil has finally been discovered by a Mr. Ryan. It consists in an application of corrosive sublimate to the wood, which either destroys the seeds of cryptogamous plants vegetating in the wood, or combines with the albuminous matter existing in wood, both of which circumstances have been considered the original causes of the decay, called Dry Rot.

Mr. Ryan, under the sanction of the Admiralty, made many experiments for years, and they appear to have been eminently successful. The timber is prepared by being soaked in a solution of corrosive sublimate; a cube of wood thus prepared, was put into the espetan hole, at Woolwich, a place subject to the fungus rot; at the end of three years it was taken out—it was sound, while the other timber was entirely decayed; it was replaced for two years; at the expiration of five years, it was found perfectly hard and sound, and exhibited no symptom of the least decay. Other experiments equally satisfactory are related.

The application has been made to canvass, &c. placed in a damp cellar for months; the prepared pieces came out sound, while the unprepared were so decayed as not to be capable of being unrolled—the texture of the cloth appears not to suffer by the application. Mr. Ryan has taken a patent for his important invention.

Without any practical knowledge on the subject, I thought a reference to it might excite the attention of some of your readers, better able to investigate the merits, and appreciate the advantages of the discovery.

FOREIGN INTELLIGENCE.

From Paris we have by the Sully our files to the 2d February. They do not furnish any special information.

The Gazette de France of 1st February says, in relation to Spain, "letters from the frontiers speak vaguely of the convoking of the Cortes. The partisans of Don Carlos appear to be concentrating their forces upon Aspetitia. The struggle leads to terrible reprisals, prisoners on either side being daily shot."

We do expect later news, however, from Spain. Meantime we give the annexed from the *Indicateur de Bourdeaux*: "What we have before stated as certain, that the new Minister, *Martinez de la Rosa*, would only consent to enter the Ministry on condition that the Cortes should be convened, has been realized. It was communicated by express on the 25th January, in Bourdeaux, that orders had just been issued by the Spanish Government for immediately convening the Cortes, *par estamentos*."

The capture of *Leyria*, midway between Oporto and Lisbon, on the 15th January, by the troops of the Queen, seems to have been received in Lisbon as a decisive event. It re-establishes the line of communication between the two principal cities of Portugal.

Miguel's troops still held Santaren, contested by 12,000 men, under the *Duke de Terceira*.

The duel between General Bugeaud and *M. Dulong* arose from a discussion in the Chamber of Deputies respecting military obedience. General Bugeaud said—"a soldier's duty was to obey." *M. Dulong* interrupted—"what, obey even to the extent of becoming a gaoler! even to ignominy?" This allusion was to General Bugeaud's having been the commandant at *Blaye* when the Dutchess of Berri was prisoner there. *M. Dulong* was just forty years old, and appears to have been much esteemed.

The debate in the Chamber of Deputies above alluded to, was produced by a measure taken by the government in relation to incorporating naval officers with the artillery, which had been resisted by the officers of the latter corps, many of whom had in consequence been imprisoned.

PARIS, 30th Jan.—A duel had taken place between General Bugeaud and Mr. Dulong, both members of the Chamber of Deputies, in which the latter was killed. The duel arose from a political quarrel.

In our papers, which only go back to the 24th, we do not find any allusion in the Chamber to the Convention of Indemnity with this country.

It is asserted in various letters published in the French papers, that the loss of the French line of battle ship *Superbe* in the gale of 14th and 15th December, (in which the frigate *United States* was also damaged) was occasioned by the insubordination and refusal to do duty, of the crew.

SPAIN

[From the *Journal du Commerce* of 31st Jan.]
MADRID, 18th Jan.—The whole capital is delighted with nomination of *Martinez de la Rosa*, who enjoys unbounded confidence. It is to be hoped that the monarchy will flourish under his wise and liberal administration. The Cortes are to be convoked, it is said, by the first of May. The news of the retirement of *M. Zea* is received with enthusiasm throughout the provinces.

M. Vasquez Figueroa, the newly appointed minister of Marine, has declined in consequence of ill health.

The Count of Toreno, has congratulated the Queen in the name of the provinces. This gentleman is much esteemed by the Government, and it may be expected that he will soon form part of the administration.

The national guard is to be reorganized, upon the same basis as previous to the dismissal of *M. Zea*, but the government will reserve to itself, the selection and appointment of its officers.

The government will soon publish a political manifesto. As the principles of *M. Martinez de la Rosa* are well known, there is no doubt of its being well received by the public.

The King of Denmark has already accredited an ambassador at the government of Elizabeth II. as have the governments of the Hanseatic towns of Germany.

The departure of a Spanish ambassador for Lisbon is spoken of.

The Carlist bands are every where destroyed, thanks to the courage and devotion of the people: with the exception of the inhabitants of Navarre and Biscay, for the obstinacy of the inhabitants of the provinces cannot yet be overcome.

Several individuals attached to the administration, and suspected of Carlistism, have been dismissed.

The Duke of Medina Coeli, grandee of Spain, and member of the council of regency, has given up for

the benefit of the treasury, his salary, amounting to 30,000 francs per annum.

The Director General of the Treasury, Mr. Peres, has announced to the Government that the national expenses for the first quarter of the year 1834, will be promptly met, the estimated revenue for that period having already been secured.

The financial system of M. Gargolis is generally disapproved of. This is not astonishing, for Martinez de la Rosa would not form part of a Cabinet, which would announce a refusal of the engagements of the years 1820 and 1821. Mr. Martinez has always supported the principle that the nation should recognize any debt contracted in the name of Spain by its government.

The Journal des Debats of the 30th January, says that a report had obtained prevalence that day, that Don Carlos had entered Spain at the head of 8000 men. They add, that in all probability there is no foundation for the report, as probably it grows out of a rumor, that the Carlists would renew their efforts during Lent, when the whole of Spain is under the complete dominion of the clergy. They likewise express an opinion that these prophesied disturbances will meet with the same result as those in France, and be entirely unattended to.

We give the following further particulars from

PORTUGAL.

PARIS, 20th January.—The news from Lisbon, by way of London, are favorable to the cause of Donna Maria: her forces have obtained more important advances than have yet signalled their efforts.

Gen. Sandaha, at the head of a division of 5000 men, reinforced by a detachment from the garrison of Peniche, took possession on the 15th January of the city of Leyria, a very strong position between Lisbon and Oporto, and about equidistant between the two. Coimbra it is said, can offer no further resistance, and there is little doubt of the junction of the troops under the command of Sandaha, and those under the command of General Stubbs at Oporto.

The Duke of Terceira, with 12,000 men, is pressing the blockade of Santarem. The force of the Miguelites is reduced to a most deplorable situation.

The capture of Leyria has spread great joy through Lisbon—it is considered as decisive of the fate of the nation. Portugal bode rose in London on the receipt of the news 3 per cent.

PRUSSIA.

BERLIN, 21st January.—It is generally rumored that since the travels of the hereditary prince, he has become strongly inclined in favor of constitutional institutions. There is no doubt that the views of the heir of the throne of Prussia will have a great influence over the proceedings of the Congress of Vienna.

Later from Cadiz.—The ship *Alciopé* has arrived at Boston from Cadiz, whence she sailed on the 7th ultimo. She brings Cadiz papers to the 3d February and Gibraltar papers to the 30th January.

A proclamation was issued by the Governor of Cadiz on the 26th —, which, after reciting that the night before, the rest of the peaceful inhabitants had been disturbed by parties of men perambulating the streets with musical instruments, and sending forth loud cries, and terrific expressions, which the organs of the law alone have a right to utter—made known his Excellency's willingness to sanction decent diversions on the application of respectable persons who could not answer for the maintenance of order, but at the same time strictly prohibited, and denounced the severest penalties against any one who should, by day or by night, send forth cries calculated to offend others, to disturb public tranquillity, or to rouse the passions of the multitude.

In future, the prisoners taken from the insurgents are to be compelled to serve six years, viz: the non-commissioned officers in the regiments or companies belonging to settlements on the coast of Africa or the Havana, and the privates in the corps stationed in Cuba, Porto Rico, and the Philippine Islands. As to the leaders of bands, they will, as heretofore, be dealt with according to law.

Correspondence of the Journal of Commerce.

MARACAIBO, Feb. 14, 1834.

Generals Montilla and Oleari, left this place yesterday, in the English man-of-war brig Victor for Jamaica, on their way to England and France, as Commissioners from Venezuela. There is no news of any kind.

SUMMARY.

United States Ship Fairfield.—It appears from a statement in the Norfolk Beacon, that on the night of November 25th, when President Flores recaptured Guayaquil from Gen. Rocafuerte, a boat was sent on shore from the United States Ship Fairfield, then in the harbor, to ascertain the cause of the firing.

About 11 o'clock the boat returned, having been fired into by the troops of Flores; two of the boat's crew were wounded; one of them, *Henry Young*, had six balls in him, two of which were in his head; he died about half an hour after getting on board; the other man, *Wm. Gunnerson*, had two balls through his body, and his left arm broken; he was recovering. The Fairfield was at Payta 13th Dec. to sail in ten days for Callao, and thence in a few days for Valparaiso.—All well.

OFFICIAL.—The following statement is from John E. Forrest, Secretary to the Commission under the Convention with France, which accompanies a bill now before Congress:

Statement.—The act establishing the commission required that the Board should assemble on the first Monday in August, 1832; but, in consequence of the short interval of time between its passage and the day fixed for the meeting, only one Commissioner attended on that day, and a full meeting was not effected until the 17th September. At this session the Board passed the necessary orders for the government of the claimants in the preparation of their memorials, and adjourned on the 18th September, to meet on the 17th December.

Second session, commenced 19th December, and continued until the 5th March, 1833. During this session 751 memorials were filed; which being examined and disposed of, and the board having no other business before it, adjourned to meet on the 10th of June following.

Third session, commenced 10th June, and continued until the 13th July. During this session 1,314 memorials were filed; and the board having examined and disposed of them, and there being no other business before it, adjourned to meet on the 21st October.

Fourth session, commenced 21st October, and continued until 19th February, 1834. During this session 555 memorials were examined and disposed of, and 230 claims examined, with the proofs filed in support of them.

The whole number of memorials filed, it will be seen, from the foregoing statement, amount to 2,591, and they were disposed of as follows:

1,792 received as settling forth good claims.
485 suspended for further consideration.
142 not received, for defect of form.
172 rejected.

2,501

[From the National Gazette.]

STEAMBOAT WILLIAM PENN.

The undersigned, a Committee of the Board of Directors of the Newcastle and Freetown Railroad Company, having examined into the circumstances connected with the destruction by fire of their fine boat *William Penn*, on the evening of Tuesday, the 4th instant, which was unfortunately attended with the loss of four lives, submit the following as the result of their investigations:

About half past 5 o'clock on the evening aforesaid, the *William Penn*, on her return from Newcastle, having on board about 150 passengers, and being about one mile this side of Gloucester Point, was discovered to be on fire, the flames bursting out with great violence on the windward side of the boat, outside of the larboard boiler near the after end of it. The committee are satisfied that it was communicated to the wood near the boiler by means of a fissure through the sheet-iron-work of one of the return flues of the furnace which had either escaped the vigilance of the workmen by whom it had been examined two days previously, or which was of still more recent origin. The wood which first became ignited was unusually dry, and therefore burnt with great rapidity, and the combustible nature of the bulkheads, and slight upper deck of the boat, together with a strong westerly wind, aided its progress, so that in a few minutes but little hopes were entertained of being able to save the boat. The efforts of Captain Jeffries and his crew to do so, seem, nevertheless, not to have been abated which the slightest chance of success remained. A hole was cut through the upper deck, and a large quantity of water was thrown on the fire, without producing any sensible effect: the hose was rigged to the forcing pump near the bow of the boat, but

so great was the press of passengers in its vicinity, that it could not be worked; and in the meantime the progress of the flames and the alarm had reached such a pitch, that nothing remained to be done but to run the boat ashore, in order to preserve the lives of the individuals on board. The tiller ropes having been burnt, this was promptly effected by means of the starboard engine—when all the passengers (except three, who jumped overboard into deep water and were drowned) were safely landed. The bodies of those who threw themselves into the river, were immediately recovered and conveyed to the city, where every effort was made that medical skill could devise to resuscitate them, but in vain.

One of these unfortunate persons was in the bow of the boat, out of danger, and rushed towards the stern, through the flames to meet his death, by precipitating himself into the water, although begged by Captain Jeffries to remain where he was. The fourth passenger who is deceased was in feeble health, and died the day succeeding the disaster, it is supposed in consequence of having been in the water.

Several horses, a portion of the mails, and the largest part of the baggage, were saved; and no doubt exists in the minds of the Committee that all the passengers might have been rescued without difficulty, but for the panic which is natural, and perhaps unavoidable, on such an occasion. It appears, however, that the greatest presence of mind was preserved by the engineers, firemen, and crew generally, one of whom held up a portion of the bulk head which the fire had forced out, and called to the passengers to go forward, whilst he thus confined the flames and prevented the passage from being interrupted.

As soon as the fire was discovered, the safety-valves were raised, to prevent the additional danger of explosion of the boilers.

Captain Jeffries remained on board, exerting himself to save the property of the passengers after all were out of the boat, and was himself the last person to leave her.

The Committee, in giving these details of the above melancholy disaster, deem it their duty to express their thanks, on behalf of the company, to the master ferryman and the captains and crews of the steam and other ferry boats, both of this city and Camden, as well as to many others, who so promptly repaired to the *William Penn*, and rendered every assistance which the nature of the case would permit.

The Committee, after a very close investigation, are enabled to state their decided conviction, that the persons already announced as dead are all that lost their lives on this distressing occasion.

On the whole, the Committee consider the fire to have been entirely accidental; and while they are of opinion that it ought to induce additional care on the part of those engaged in steam navigation, they are unable to perceive that any want of prudence or caution can be attributed to Captain Jeffries or the persons employed under him; on the contrary, they deem Captain Jeffries entitled to every confidence, and believe that his conduct in the trying circumstances in which he was placed was deserving of the highest praise.

JAMES LEFEVRE,
S. NEVINS,
WM. D. LEWIS,
WM. J. WATSON,

} Committee.

Philadelphia, March 11, 1834.

Extract from a printed circular of Messrs. Baring, Brothers & Co. of London, dated Jan. 22d.

"There has been some demand for American stocks since the beginning of the month, but at low prices; and the amount of various descriptions in the market being large, we do not look for any improvement, particularly as the financial difficulties in the U. S. alarm our capitalists."

LOWER C. VADA.—The address to the King, embodying ninety-two resolutions, demanding the impeachment of a governor-in-chief, &c. finally passed the assembly on the night of the 1st inst., yeas 43, nays 20. An address to the governor, praying him to transmit the address to the King, was also adopted; and the governor received the assembly with their address on the 4th inst. Mr. Morin had been appointed to go to London, as bearer of the resolutions, and about £300 had been subscribed for that purpose.

To the Editor of the New York American :

Sir—I sincerely hope the Hebrew language will henceforth attract the attention of American ladies as much as it has attracted that of their sex in Europe of late years. The advertisement in your columns leads me to cherish this hope. No one, ignorant of the sacred language, can conceive the exquisite feelings which accompany the reading of it. I can never forget my delight at the sweet simplicity of sentences as—"And behold it was very good;" "Fear not Abraham," &c. The awe with which I read those words full of majesty—"Let there be light, and there was light;" nor my wonder when I understood the grammatical meaning of the name of Jehovah. To the refined and pious mind, the reading of the Hebrew Bible is accompanied with pleasure ever new, ever varied, ever thrilling. There, indeed, we drink at—

Siloa's brook that flow'd
Fast by the oracle of God.

Without an intimate acquaintance with Hebrew, we can neither understand many important passages in our Bible, nor feel those many beauties in our own language, which may be called Hebraisms—the incorporating of which, speak so highly in praise of the piety of our forefathers. The illustrious poet of the English language, whom I have just quoted, constantly indulges in these Hebraisms; and his free use of them, has gained for his immortal poem the merit of more sublimity than either the Iliad or the Æneid. The female of taste and education, who has spent days of delight over the Paradise Lost, and thinks she appreciates the sublime bard, must learn Hebrew; and then she will confess, that, comparatively speaking, she had really tasted very few of his refined allusions, and those in a very slight degree. How quickly is the poet appreciated by the Hebrew scholar when he reads Milton's translation of the word *merachepath*, in the 2d v. of the 1st chapter of Genesis, as we have it in his invocation :

Thou from the first
Wast present; and with mighty wings outspread
Dove-like sat'st brooding on the vast abyss,
And mad'st it pregnant.

The remark has been made by a truly learned man, that the fate of the English scholar was a hard one; since he could not really be called such till he had attained an acquaintance with Hebrew. Had he known, as well as I do, the facility with which it is acquired, compared with Latin or Greek, he would have blessed the difficulty which he continued to deprecate all his life. SARNIA.

NORFOLK vs. NEW YORK.—The proprietors of the New York and London line of Packets, have recently announced their intention to reduce the freight of tobacco to 25 shillings per hogshead. This is intended to bring shipments of the article from southern ports, and will have a ruinous effect upon the southern lines of Packet. The line established between James river and Liverpool will be rendered wholly useless by the measure, as it cannot afford to carry the article for less than thirty-five shillings per hogshead. This anticipated result has greatly irritated the good people of Norfolk. Their papers contain several fiery protests against it, and some hot-headed simpleton even talks about "a recurrence to first principles." The fact is, that it is vain, in matters of business, to expect men to be guided by a sense of the interests of others. If New York can make money by the new arrangement, the Norfolk line will have to retire before the superior facilities of their northern competitor.

NAVAL LYCEUM.—We published some days ago, the letter of James Madison, accepting an honorary membership of this institution. We now have pleasure in publishing the letter of JOHN QUINCY ADAMS. Commodore Chas. C. Ridgely, New York, President United States Naval Lyceum:

WASHINGTON, FEB. 24, 1834.

Sir:—I have received your letter of the 14th inst., notifying me of the honor done me by the members of the United States Naval Lyceum, in electing me an honorary member of that institution. I pray you, Sir, to tender to the members of the Lyceum my thanks for this gratifying mark of distinction, and to accept them for the obliging manner in which you have communicated it.

Taught from my infancy to consider the Navy of this Union as our most effective wall of defence; a witness in childhood of that gallantry which, from

that day to the present, has so eminently signalized the career of the mariners in her service, I cannot but take pride in finding myself associated with the members of a profession alike adapted to promote the honor of their country in Peace, as to protect her interests in War, and in the pursuit of purposes which may give energy to the practical skill to be displayed on its appropriate element, by investing it with the progressive improvements of science, and the embellishments of literature and the arts.

I am with great respect, Sir, your ob't serv't,
JOHN QUINCY ADAMS.

THE ANGEL APPEARING TO THE SHEPHERDS.—We have not yet found a moment ourselves to go and look at this new, and as we hear on all sides, fine picture, by COLE. A friend, however, who has just come from there asks room, which we cheerfully make, for the annexed remarks.

COLE'S NEW PICTURE.—We visited the Academy in Barclay street in order to see the new production of one so well known to the public. The picture is certainly beautiful, and the subject appears to us for many reasons, admirably adapted to the pencil. It refers to the solemn communication by the Angel to the Shepherds of the advent of Christ, and the promise of peace and good will on earth to man. The Shepherds are watching their flocks on the plains of Bethlehem; the star which led the wise men shines out in bland radiance, over the sacred spot, while on the other side, the Heavens are drawn aside, and the messenger announces to the affrighted herds, men the tidings of great joy—"Unto you is born this day a Saviour." The lights are well managed, and the repose and stillness of the scene are beautifully portrayed. The figure of the elder shepherd is effective, and the gradations of terror and amazement in all three, is happily conceived. The watchfulness of the dog is contrasted with the sleeping of the goat, who, though standing up, is evidently taking his nap.

We think this picture will add to the reputation of Mr. Cole, and we are sure no one will regret having paid it a visit or two."

[From the Intelligencer of yesterday.]

The President yesterday re-nominated to the Senate the three persons lately rejected as Government Directors of the Bank of the United States. The reasons which he assigned to the Senate for this unusual step, if any, were communicated in confidence, and are of course unknown to us.

OHIO.—The Legislature of this State adjourned on the 3d inst. The Columbus Journal furnishes the following list of monied incorporations created by the Legislature at the recent session:—

NAMES.	CAPITAL.
Ohio Life Insurance and Trust Company	\$2,000,000
Lafayette Bank of Cincinnati	1,000,000
Clinton Bank of Columbus	300,000
Bank of Cleveland	300,000
Bank of Massillon	200,000
Bank of Circleville	200,000
Bank of Wooster	100,000
Bank of Xenia	100,000
Bank of Sandusky	100,000
Bank of New Lisbon	100,000
Total	\$4,400,000

[From the Charleston Courier of March 3.]

COTTON.—There was less doing in this article than during the previous week, owing, in a great measure, to two or three days of bad weather, and the Races. Holders, however, have remained firm, and former prices were fully maintained. The late news from Liverpool, received on Saturday, had no visible effect upon the prices in this market—sales having been made after the receipt of these accounts, at about former rates. The total sales of Upland amounted to upwards of 3000 bales, viz:—33 bales at 10 cents—20 at 10½—104 at 10½—332 at 10½—376 at 11—260 at 11½—284 at 11½—363 at 11½—67 at 11½—80 at 11½—351 at 12—124 at 12½—194 at 12½—194. The transactions in Sea Island and Mains were fair at from 20 to 25 for common, and upwards for finer description. Sales of all description meet with ready sales. We quote Sea Island and Mains, common, 30 at 95; fine do. 96 and upwards; Santos, 18 a 21; Short Staple, inferior to middling, 10 a 10½; fair to good, 11 a 11½; prime to choice, 12 a 12½.

RICE.—We have no alteration to make in the price of this article. A little more inquiry was experienced for middling qualities, and holders are generally firm. The sales amounted to upwards of 3000 bbls. viz:—197 bbls. at 9½—264 at 9½—16—530 at 21—231 at 21—176 at 21—185 at 21—130 at 21—150 at 21.

New England Banks.—The amount of Country Bank notes exchanged at the Suffolk Bank during the last year, was eight millions of dollars, of \$386,000 a day.

[From the Roseville (Ohio) Telegraph.]

INDIAN HOSTILITIES NEAR HOME.—The following are the incidents of an affray which has produced here considerable excitement:

Mr. L. B. Bartlett, agent of the celebrated Miami chief, Godfrey, passed through this place in company with Poqua, son of Godfrey, on their return from Cincinnati to the residence of the latter near Fort Wayne, Indiana, on Thursday, 7th inst. They stopped at a public House 4 miles west of this. A short time after going to bed, Poqua having gotten up on some false pretext, and provided himself with a dirk from his saddle bags, sounded the accustomed war whoop in the ear of his astonished fellow traveller, and stabbed him through the arm. Both instantly sprang to the floor, and a desperate struggle ensued—the Indian still uttering his fearful yells and occasionally wounded Bartlett. The noise awakened a number of individuals who rushed into the room. Mr. Clendinning, the landlord, entered first, with a candle; this the savage struck out and stabbed M. C. in the chest. Messrs. J. and W. M. Whitney next entered; the former of whom he wounded in the shoulder; the latter, like Achilles, received a stab in the heel. A Mr. Hipes next advanced—him he wounded in the arm. The next thrust was at Mr. Bruce, which passed through his clothes. Having lost his dirk accidentally he now commenced with his fists, and soon remained sole master of the room, where he was blockaded until morning, when he quietly gave himself up. He is now in our county jail. No adequate cause for his conduct has been assigned. The manner of the agent, Mr. B., towards him, appears to have been invariably kind, and Poqua has heretofore sustained a high character. It is supposed that none of the wounds are fatal, though Mr. Clendinning and Mr. Bartlett are seriously injured—the latter in five places.

NEW ORLEANS 25 FEB.—A Riot.—On Friday night last a serious disturbance took place among the Irish laborers employed in digging the upper canal and some of a different section of the country, who were employed in making and repairing the Levees down the coast. It appears that a man named Allahan, had failed to obtain a job of work, and therefore was determined to impede its progress of his successful competitor, and in the course of Friday went down to the Coast with his band to put his threats in execution; finding his party too weak, he said he would fetch a gang that would flog them and left the ground. Late in the night he returned, with a gang from the Canal, and fell upon his opponents, and beat them, and maltreated them most brutally—the result of which was that three of them have died from their bruises, and many more are severely hurt. During Saturday the Police were actively engaged in detecting some of the offenders, and three or four were arrested. On Saturday night, however, the attack was again resumed, and the attention of the Police was called to a gang of the desperadoes, armed with muskets and fowling pieces, collected on the Gentry Ridge. They had worried and beaten, so we learn, several negroes on the different plantations. The guard immediately repaired to the spot, when they were met by a discharge of musketry, one ball striking the musket of one of the guard, cutting it asunder and wounding the man. The guard returned the fire and finished by taking 23 of these ruffian pioneers and bringing them to prison, where they are now confined. On Sunday night a party of these same men entered the miserable dwelling of an old woman and her daughters, and beat them most cruelly, and so they continued their practices until the Police checked them in their murderous career. Parties of three and four of these ruffians, armed, were met by the guard, and arrested, on Sunday night, and conducted to prison. It is really somewhat alarming that these men, disregarding the rights of their fellow men, should thus put a whole community into commotion. Such acts as these can by no means have a beneficial tendency, and the result will be that rather than encourage them at all, other men will obtain a higher price for work, which, perhaps, will not be so well executed. We do sincerely hope that the offenders will be brought to justice, and above all, the leader of this riot, Allahan.

Yesterday an affray took place on the Levee between two boatmen, which terminated in the death of one. The particulars of the quarrel we have not yet learned. The offender was immediately arrested by the police, and is now awaiting his examination before the Mayor.—[New Orleans Mer. Adv.]

The old line of Liverpool packets—the establishment of which all admit to have given the first great impulse to that regularity, despatch and certainty, which now characterize our intercourse with the chief ports of Europe—has recently, as we have before stated, passed into new hands.

Two regulations have been recently introduced, which seem to meet with universal approbation. The one fixing the price of passage at *one hundred and twenty dollars, without liquors*—thus exempting those passengers who do not use them, from contributing to pay for those who do—while to the latter the steward will always be prepared to supply at a fixed rate, such wines &c. as may be desired. The other is, that when the regular day of sailing falls on a Sunday, the vessel will be detained till Monday. This, as a mere matter of business, is a great convenience, as it gives to shippers, the chance of another day's mail to forward the latest accounts to their correspondents; and enables them, moreover, to close their most important letters on the very day of the vessels sailing; which, when that occurred on Sunday could not be. This will be felt by all merchants to be of itself a great advantage.

The line of London packets have, we understand, also adopted these regulations—which, it is reasonable to presume, receiving as they seem to do, the unanimous approbation of the business classes—will be in like manner adopted by the various other lines of European packets.

NAVAL LYCEUM.—Although, amid the more engrossing topics of the day, little has been lately said in our paper of this excellent institution, it does not, we are glad to find, cease to interest the public. We received, a day or two ago, a fine fruit piece from the Hope gallery, intended for the Lyceum; and now we have pleasure in publishing an excellent letter from James Madison, accepting an honorary membership in that association.

MONTPELIER, FEBRUARY 20, 1834.

Dear Sir:—I have duly received your letter, notifying the honorary membership conferred on me by the "United States Naval Lyceum, New York." The laudable objects of the Institute, and the names with which mine is associated, give the distinction a value, which claims the special acknowledgments which I beg may be accepted. I must at the same time express my sensibility to the very kind terms in which the communication is made to me, and the gratification I must always feel, in reflecting, that selections made for the Naval Service of the United States, whilst the Executive was in my hands, were so well justified by a brilliancy of career in war, and an honorable usefulness in peace.

Be pleased to accept for yourself my cordial respects and salutations. JAMES MADISON.

Commodore CHARLES G. RIDGELY.

JOHN BREATHTITT, Governor of Kentucky, died of consumption, at the seat of Government, Frankfort, on Friday the 21st ult.

On Saturday, James T. Morehead, Esq. Lieut. Governor, was qualified and entered upon the duties of his office as Governor, in consequence of its vacation, by the death of Gov. Breahtitt. James Guthrie, Esq. of Louisville, was elected Speaker of the Senate, in the place of the Lieut. Governor.

APPOINTMENTS—FEBRUARY 25, 1834.

By the Governor, with the advice and consent of the Senate.

NEW YORK—David Austin, William G. Bull, Thomas P. Bowne, John J. Bedient, Anthony W. Bleecker, James Bleecker, Jacob Burdett, Wm. J. Brown, Thomas Bell, Joseph W. Corlies, Richard Crawford, John P. Dieterich, Joseph Daymon, Isaac T. Doughty, Wm. H. Franklin, James Gourlay, Wm. Gerard, James N. Giffing, Lindley M. Hoffman, Peter M. Halstead, John Herriman, George Innis, Sidney P. Ingraham, Samson M. Isaacs, Elisha Kingsland, Aaron Levey, Richard Lawrence, John Langdon, Gilbert Lewis, Wm. M'Laughlin, Wm. M'Donnell, Wm. D. M'Carty, Rowland R. Min-

turn, James M. Miller, Robert Charles Morris, Geo. M'Kay Morrill, Geo. S. Munn, Aaron B. Nones, Samuel Philips, John Pearson, Thomas W. Pearsall, Lawrence Power, Henry L. Patterson, James C. Smith, Solomon Seixas, Daniel Sparks, Charles B. Spicer, Wm. Timpson, Edward G. Thompson, Abraham Waterhouse, Jacob Van Winkle, and Charles N. Yeoman, auctioneers. Samuel Satterlee, jr. measurer of grain. Judah Hammond, Justice of the marine court. John Wright, Samuel W. Disbrow, Isaac L. Tompkins, Oliver H. Tompkins, Cornelius Timpson, Samuel Clark, John Vredenburg, Lewis Smith, Jacob Brinckerhoff, J. G. Ketchum, Edward Webb, Oliver Holden, Ebenezer Briggs, Joseph Earle, Gilbert Perkins, Jobert T. Clark, and Tobias L. Stoughtenburgh, measurers of grain.

[From the Journal of Commerce.]

COUNTRY BANKS.—Through the kindness of a gentleman connected with one of our Banking institutions, we are enabled to lay before our readers a list of those country Banks which redeem their bills at Banks in this city. There are thirteen, of which the bills, of all denominations, are redeemable in New York; and of these, eight have assumed this new relation within the last ten days. The names of such are printed in italics. The other five have been long in the habit of redeeming their notes in this city. Of the whole thirteen, all are Safety Fund Banks except two. Seventeen other country Banks redeem their bills, of and above a certain denomination, at the Banks in this city. The annexed schedule gives the particulars:

List of Banks whose Bills are redeemed in New York.

<i>Newburg Bank</i>	<i>N. Y. State Bank, at Albany</i>
<i>Brooklyn Bank, L. I.</i>	<i>Mechanics' and Farmers' Bank,</i>
<i>Long Island Bank, Brooklyn</i>	<i>at Albany</i>
<i>Dutchess County Bank</i>	<i>Catskill Bank</i>
<i>Hudson River Bank</i>	<i>Westchester County Bank</i>
<i>Poughkeepsie Bank</i>	<i>Canal Bank, Albany</i>
<i>Bank of Troy</i>	<i>Farmers' Bank, Troy</i>
<i>Farmers' & Mechanics' Bank, Rahway</i>	..... 5's and upwards
<i>State Bank, Elizabethtown</i>	..... 5's and upwards
<i>Newark Banking and Insurance Co.</i>	..... 5's and upwards
<i>Trenton Banking Co.</i>	..... 5's and upwards
<i>State Bank, Newark</i>	..... 5's and upwards
<i>Mechanics' Bank of Newark</i>	..... 5's and upwards
<i>State Bank, New Brunswick</i>	..... 5's and upwards
<i>State Bank, Morristown</i>	..... 5's and upwards
<i>Commercial Bank, Amboy</i>	..... 10's and upwards
<i>Belvidere Bank, N. J.</i>	..... 10's and upwards
<i>Orange Bank of Essex</i>	..... 10's and upwards
<i>Mech. & Merch. Bank, Middlet'n Point</i>	..... 10's and upwards
<i>Bank of Albany</i>	..... 30's and upwards
<i>Saratoga County Bank</i>	..... 50's and upwards
<i>Commercial Bank, Albany</i>	..... 50's and upwards
<i>Lansingburg Bank</i>	..... 50's and upwards
<i>Troy City Bank</i>	..... 100's and upwards

Several Banks issue more or less Notes drawn payable in New York.

Disaster at Sea.—The schr. Mary Francis, Capt. B. Kirwan, of East River, which sailed from that place about 15 days ago, bound to the West Indies, returned there last Friday night in distress. She was run foul of, on the night of the 14th, in the latitude of Bermuda, by the ship Triton, bound to Portsmouth, (N. H.) from the South Sea. The ship had all sail set and was going nine or ten knots, and struck the schooner on the starboard quarter, knocked Capt. Kirwan and one of his men overboard; the man was lost, and Captain Kirwan had his right arm and leg broken, and otherwise dreadfully mangled; notwithstanding which he got hold of a rope with his left hand, and held on for half an hour, before his cries were heard, and then there were only two men on board, (the other two having got on board the ship when in contact.) It was two or three hours before the ship got in sail, and returned to the schooner; they lay by her until daylight, when she left her. The schooner is quite new, and is a very strong vessel, consequently did not receive as much damage as might have been expected; she lost three stanchions, the rail waist and part of the taffrail, but does not leak more than she did before the accident.—Capt. Kirwan's sufferings are most excruciating, and if his life is saved, it is feared he will lose his leg. The ship was before the wind, and the schooner was close hauled; they saw each other quarter of an hour before they came in contact, and Captain Kirwan used every exertion to get of the way, but as his vessel was under easy sail, he could not keep clear of the ship. Capt. Kirwan does not know how he got hurt, and has no recollection of any occurrence after the ship struck, and he was twenty yards astern of the vessel with a rope in his hand, and although she was going two or three knots, he contrived to haul himself up with one hand until he reached her before they heard him on board. The Captain of the ship was below. The ship's head and bowsprit were carried away, and part of the

head fell on the schooner's deck. The schooner is loaded with flour and corn, belonging to some persons in Fredericksburg; she will repair damages and proceed on her voyage the last of the week, under the command of Capt. Kirwan's son.—[Norfolk Beacon.]

APPOINTMENTS BY THE PRESIDENT,

By and with the advice and consent of the Senate. John G. Mawney, Surveyor and Inspector, East Greenwich, R. I.

Samuel Brown, Naval Officer, Providence, R. I.

David Henshaw, Collector of Customs, Boston, Mass.

John McNeil, Surveyor and Inspector, for the same port.

George Brent, Collector of Customs, Alexandria, D. C.

(The above are all re-appointments.)

Armsted D. Carey, Receiver at Sparta, Alabama, in place of I. S. Hunter resigned.

James H. Weakley, Surveyor General of Public Lands in Alabama, in place of John Coffee, deceased.

Alexander Hunter, to be Marshal for the district of Columbia, in the place of Henry Ashton deceased.

Byrd Brandon to be Attorney for the Northern District of Alabama, re-appointed.

Garret D. Wall to be Attorney for the District of New Jersey, re-appointed.

Daniel Kellog to be Attorney for the District of Vermont, re-appointed.

Benjamin F. Linton to be Attorney for the Western District of Louisiana, re-appointed.

David C. Wilson to be Marshal for the District of Delaware, reappointed.

Augustus Jones to be Marshal for the District of Missouri, reappointed.

Heman Lowry to be Marshal for the District of Vermont reappointed.

William Lyon to be Marshal for the Eastern District of Tennessee, reappointed.

John McCalla to be Marshal for the District of Kentucky, reappointed.

Thomas B. Monroe to be Judge for the District of Kentucky in the place of John Boyle, deceased.

The Canals, according to a statement by authority in the Albany Argus, will be open for navigation on the 17th April. The water will be let in, and the whole extent be navigable on the morning of that day.

The Mobile Register of February 22d, says, "The Branch of the United States Bank in that City has resumed the purchase of foreign exchanges. The rates have not come to our knowledge.

The Mechanics' Bank of this city have received funds from the Government, with which to pay those pensioners whom the Bank of the United States have been prohibited, by the Secretary of War, from paying.

THE SILK WORM.—BY MRS. SARAH JANE HALE.

There is no form, upon our earth,
That bears the mighty Maker's seal,
But has some charm—to draw this forth,
We need but hearts to feel.

I saw a fairy young girl—her face
Was sweet as dream of cherish'd friend;
Just at the age when childhood's grace
And maiden softness blend.

A silk worm in her hand she laid,
Nor fear, nor yet disgust was stirred;
But gaily with her charge she play'd
As 'twere a nestling bird.

She raised it to her dimple cheek,
And let it rest and revel there—
O, why for outward beauty seek!
Love makes its favorites fair.

That worm—I should have shrunk, in truth,
To feel the reptile o'er me move,
But loved by innocence and youth,
I deemed it worthy love.

Would we, I thought, the soul imbue,
In early life, with sympathies
For every harmless thing, and view
Such creatures formed to please;
And when with usefulness combined,
Give them our love and gentle care—
O, we might have a world as kind
As God has made it fair!

There is no form upon our earth,
That bears the mighty Maker's seal,
But has some charm—to call it forth,
We need but hearts to feel.

There is good sense and sound argument in the annexed remarks from the Journal of Commerce.

EXCHANGE IN CHINA.—It is mentioned in the letters from Canton, that bills of Exchange drawn by the United States Bank upon their bankers in London, had been sold at the rate of 4s. 4d. per dollar, while there was no sale at all for private bills. The fact is worthy of a moment's consideration, as illustrating the importance of such an institution. The China trade was formerly carried on almost wholly by exporting silver dollars. But within a few years past, the Chinese, perhaps having satisfied themselves with making silver gods, have turned their attention to articles of more substantial importance. They purchase large quantities of British goods, which renders exchange on London as good to them as dollars and better. But at such a distance and under the circumstances which exist, it is impossible to establish private credit firmly enough to sustain so large a business, under all the fluctuations of opinion. Generally to be sure, private bills have been negotiated with success, but nothing short of a great national institution has sufficient notoriety and firmness of responsibility to resist the suspicions which occasionally spring up. By means of bills of exchange, our teas and silks from China are paid for by the products of our own soil. For, the bills drawn on London and sold in Canton, are met and paid by funds resulting from sales of Cotton and other articles in the ports of Europe. The great expense and risk of exporting specie is saved, and one cause of fluctuations in the money market avoided. A ship sails to Canton for a cargo of great value, and her whole outward cargo consists of three or four slips of paper, six inches by four. If the whole cargo is lost, every thing is saved.—Pirates may capture it, or the fire burn it, still it is safe, and in possession of the rightful owner.

We know there are some persons who consider credit a dangerous thing. They say it induces over trading, and brings on fluctuations and ruin. If this were ever so true we prefer fluctuations to total inaction. It is better that there should be failures occasionally, and that some individuals should be disappointed in their golden expectations, than that the whole country should lie dormant and stupid. It is better that the nation should march on rapidly in wealth and comfort, though a few individuals may encounter misfortune, and share less than they wished, in the general prosperity.

In the case of the China trade, it is evident that the bills of exchange answer every purpose of specie. The credit is as good as the silver. And the saving of expense enables the people to be furnished with teas and other articles of comfort or luxury, much cheaper than they could otherwise be furnished. Why then should the specie be carried around the world, when credit is the most convenient and economical article. If it were necessary to embarrass enterprise at all, it might better be done in some cheaper way. But no such embarrassments are necessary or proper. It would be as wise to deny to men the use of steam, lest they should drive too furiously, as to deny them the use of credit lest they should overtrade. All that is necessary, is, a steady and wise management, and credit becomes as safe as cash, and steam as safe as the dullest donkey.

SINGULAR OLD SONGS.

The longer life, the more offence;
The more offence, the greater pain;
The greater pain, the less defence;
The less defence, the lesser gain—
The loss of gain long ill doth try:
Wherefore, come, death, and let me die!
The shorter life, less count I find;
The less account, the sooner made;
The count soon made the merrier mind;
The merrier mind doth thought invade—
Short life, in truth, this thing doth try:
Wherefore, come, death, and let me die!
Come, gentle death, the ebb of care;
The ebb of care, the flood of life;
The flood of life, the joyful fare;
The joyful fare, the end of strife—
The end of strife, that thing wish I:
Wherefore, come, death, and let me die!

[From the Boston Atlas.]

TO A TYRANT—CONTEMPLATING A TRIP TO ARABIA.

Farewell! Go seek the desert sands,
Less barren than thy heart and brain;
And o'er the roving Arab bands,
In absolute dominion reign:
To pity they have stolen their souls;
They thirst for battle and for spoil;
Prompt to all deeds of violence,
Eager for blood, and apt for spell.
There every sight thou meet around,
A mirror of thy mind will be;
And every fierce, tumultuous sound
Will echo thine own thoughts to thee:
Thy present friends would only care
To help thee on a little farther;
Congenial horrors wait thee there,
Congenial souls will call thee MASTER!

TO STEAMBOAT COMPANIES.

PROFESSOR RAFFINISQUE, of Philadelphia, offers his services to render steamboats incombustible, and not liable to sink, even by the bursting of boilers, or striking against snags, sawyers and rocks. This will save many boats, much property, and the lives of hundreds every year. Those who neglect this easy improvement, deserve to be neglected and deserted by the public as unmindful of safety. Apply, post paid. S. I. R. J. M. & F.

TOWNSEND & DUFFEE, of Palmyra, Manufacturers of Railroad Rope, having removed their establishment to Hudson, under the name of *Duffee, May & Co.* offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J. B. Jervis, Eng. M. & H. R. R. Co., Albany; or James Archibald, Engineer Hudson and Delaware Canal and Railroad Company, Carbondale, Luzerne county, Pennsylvania.
Hudson, Columbia county, New-York, }
January 29, 1833.

ALBANY SEED-STORE AND HORTICULTURAL REPOSITORY.

The subscriber having resumed the charge of the above establishment, is now enabled to furnish traders and others with FRESH GARDEN SEEDS, upon very favorable terms, and of the growth of 1833, warranted of the best quality.

The greatest care and attention has been bestowed upon the growing and saving of Seeds, and none will be sold at this establishment excepting those raised expressly for it, and by experienced seedsmen; and those kinds imported which cannot be raised to perfection in this country; these are from the best houses in Europe, and may be relied upon as genuine.

It is earnestly requested whenever there are any failures hereafter, they should be represented to the subscriber; not that it is possible to obviate unfavorable seasons and circumstances, but that satisfaction may be rendered and perfection approximated.

Also—French Lucern, White Dutch Clover, White Mulberry Seed, genuine Mangel Wurtzel, Yellow Locust, Ruta Baga, and Field Turnip Seeds, well worth the attention of Farmers.

W. THORBURN,
347 N. Market st. (opposite Post Office.)

Catalogues may be had at the Store; if sent for by mail, will be forwarded gratis. Orders solicited early, as the better justice can be done in the execution.

Mr. Thorburn is also Agent for the following publications, to wit:—

NEW YORK FARMER and American Gardener's Magazine.
MECHANICS' MAGAZINE and Register of Inventions & Improvements.

AMERICAN RAILROAD JOURNAL and Advocate of Internal Improvements; and the

NEW-YORK AMERICAN, Daily, Tri-Weekly, and Semi-Weekly; either or all of which may be seen and obtained by those who wish them, by calling at 347 North Market street, Albany.

SURVEYORS' INSTRUMENTS.

Compasses of various sizes and of superior quality, warranted.

Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by
E. & G. W. BLUNT, 154 Water street, corner of Maidenlane.
J31 6t

ENGINEERING AND SURVEYING INSTRUMENTS.

The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely new: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy—also, a Railroad Goniometer, with two Telescopes—and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.

WM. J. YOUNG,
Mathematical Instrument Maker, No. 9 Dock street, Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.
Baltimore, 1832.

In reply to thy inquiries respecting the Instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad. I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable.

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sights, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to lateral angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying off rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,

JAMES F. STABLER, Superintendent of Construction of Baltimore and Ohio Railroad.
Philadelphia, February, 1833.

Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors.
E. H. GILL, Civil Engineer.

Germanstown, February, 1833.
For a year past I have used Instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these Instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY K. CAMPBELL, Eng. Philad.,
Germantown, and Norrist. Railroad

STEPHENSON,

Builder of a superior style of Passenger Cars for Railroads
No. 264 Elizabeth street, near Bleecker street,
New-York.

RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part of the New-York and Harlem Railroad, now in operation.
J 35 1t

RAILROAD CAR WHEELS, BOXES AND OTHER RAILROAD CASTINGS.

Also, AXLES furnished and fitted to wheels complete at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to. Also, CAR SPRINGS.

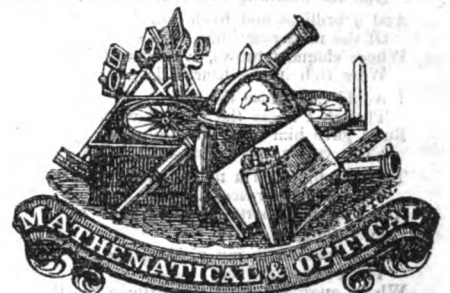
Also, Flange Tires turned complete.

J8 ROGERS, KETCHUM & GROSVENOR.

NOVELTY WORKS,

Near Dry Dock, New-York.

THOMAS B. STILLMAN, Manufacturer of Steam Engines, Boilers, Railroad and Mill Work, Lathes, Presses, and other Machinery. Also, Dr. Nott's Patent Tubular Boilers, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited.
m18



INSTRUMENTS.

SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

EWING & HEARTT, at the sign of the Quadrant, No. 53 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude.

For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewing & Heartt.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable. They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES P. STABLER,

Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' instruments of your Manufacture, particularly Spirit levels, and Surveyors' Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These Instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

WILLIAM HOWARD, U. S. Civil Engineer.

Baltimore, May 1st, 1833.

To Messrs Ewing & Heartt.—As you have asked me to give my opinion of the merits of those instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming acquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprise so well merits, I remain, yours, &c.

B. H. LATROBE,

Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them upon application, to any person desirous of procuring the same.

[From the Token for 1834.]

FLOWERS—BY MRS. SIGOURNEY.

I'll tell thee a story, sweet,
Here under this shady tree;
If thou'lt keep it safe in thy faithful breast,
I'll whisper the whole to thee.

I had a lover, once,
In my early, sunny hours,
A fair and fanciful youth was he,
And he told his love in flowers.

I remember its waking sigh—
We roam'd in a verdant spot,
And he culled for me a cluster bright
Of a purple forget-me-not.

But I was a giddy girl,
So I toss'd it soon away,
And gather'd the dandelion buds,
And the wild grape's gadding spray.

He marked their blended hues,
With a sad and reproachful eye,
For one was the symbol of thoughtless mirth,
And one of coquetry.

Yet he would not be baffled thus,
So he brought for my crystal vase,
The rose geranium's tender bloom,
And the blushing hawthorn's grace.

And a brilliant and fresh bouquet
Of the moss-rose buds he bore—
Whose eloquent brows, with dew-drops pearl'd,
Were rich in the heart's deep lore.

I would not refuse the gift,
Though I knew the spell it wove,
But I gave him back a snow-white bud,
"Too young, too young to love."

Then he proffer'd a myrtle wreath,
With damask roses fair,
And took the liberty—only think—
To arrange it in my hair.

And he press'd in my yielding hand,
The everlasting pea,
Whose questioning lips of perfume breathed
"Wilt thou go, wilt thou go with me?"

Yet we were but children still,
And our love, though it seemed so sweet,
Was well express'd by the types it chose,
For it pass'd away as fleet.

Though he brought the laurus leaf,
That changes but to die,
And the amaranth, and the evergreen,
Yet what did they signify.

Of o'er his vaunted love
Suspicious moods had power,
So I put a French marigold in his hat,
That gaudy, jealous flower.

But the ruthless passion shrank
Like Jonah's gourd away,
Till the shivering ice-plant best might mark
The grades of its chill decay.

And he sail'd o'er the faithless sea,
To a brighter clime than ours—
So it faded that fond and fickle love,
Like its alphabet of flowers.

I'll be a fairy, and drink the dew,
And creep through the honied flowers,
And sleep in the violet's tender blue,
And dance in the evening hours.

My music shall be the soft low gales
Which sigh through the dark green trees,
And heaven's breath swell the gossamer sails
With which I swim the breeze.

The glow-worm shall be my gentle light,
And a lily's cup my bed;
And I'll warm me in the sweet moon-light,
And on fallen roses tread.

And ever fresh the grass shall grow
Around my mystic ring,
And little murmurs, sweet and low,
Shall answer when I sing.

And I will hold a fairy court,
And call each slumbering fay,
And wild and gaily will we sport,
As the twilight fades away.

I'll be a fairy and drink the dew,
And creep through the honied flowers,
And sleep in the violet's tender blue,
And dance in the evening hours.

NOTICE TO MANUFACTURERS.

SIMON FAIRMAN, of the village of Lansingburgh, in the county of Rensselaer, and state of New-York, has invented and put in operation a Machine for making Wrought Nails with square points. This machine will make about sixty 6d nails, and about forty 10d nails in a minute, and in the same proportion larger sizes, even to spikes for ships. The nail is hammered and comes from the machine completely heated to redness, that its capacity for being clenched is good and sure. One horse power is sufficient to drive one machine, and may easily be applied where such power for driving machinery is in operation. Said Fairman will make, vend and warrant machines as above, to any persons who may apply for them as soon as they may be made, and on the most reasonable terms. He also desires to sell one half of his patent right for the use of said machines throughout the United States. Any person desiring further information, or to purchase, will please to call at the machine shop of Mr. John Humphrey, in the village of Lansingburgh.—August 15, 1833. A291 R M & F

Those papers with which the American exchanges, and in which the following advertisements are inserted, will confer a favor on the subscriber by giving the following a few insertions:

Subscribers who are indebted for the *New York American*, the *Railroad Journal*, *Mechanics' Magazine*, or *New York Farmer*, are respectfully requested to remit the amount by merchants, or other gentlemen visiting the city *this spring*, and, if possible, in notes of the United States Bank, or its Branches, as the expense of postage and the discount on notes of distant Banks, is a great tax upon the Office.

VOL. III. OF THE RAILROAD JOURNAL AND ADVOCATE OF INTERNAL IMPROVEMENTS is published once a week in quarto form, with 16 pages to each number, at \$3; or in semi-monthly form, of 32 pages, stitched in a cover of colored paper, at \$4 per annum, in advance. The first and second volumes of the Journal may be had in two parts to the year, either stitched in covers or bound in boards, at the subscription price, with price of binding, in one part, 50 cents, in two parts \$1 per volume. Those in covers may be sent by mail to any part of the country, the same as a magazine. Published at No. 35 Wall st., New-York, by D. K. MINOR, Editor and Proprietor.

THE MECHANICS' MAGAZINE AND REGISTER OF INVENTIONS AND IMPROVEMENTS is now just commencing its second year. It will be continued in a manner altogether superior to that of the first year. It has drawn forth many valuable correspondents, in different parts of the country, with the assistance of whom, and those who may hereafter contribute to its columns, together with the ability of Mr. JOHN KNIGHT, formerly, and for several years, proprietor and publisher of the *LONDON MECHANICS' MAGAZINE*, who is engaged as Editor, the proprietor has no hesitation in saying that it will be found worthy of an extended circulation and a liberal support. The first year, or two first volumes, having been stereotyped, may now be had either in numbers, or bound in boards—either at wholesale or retail. Price \$1 50 per vol. in numbers, or \$1 75 in boards, or \$3 per annum. A liberal discount made to the trade. Published by the proprietor, D. K. MINOR, at No. 35 Wall st. N. Y.

THE NEW-YORK FARMER AND AMERICAN GARDENER'S MAGAZINE, has commenced the second volume of a new series. It is published once a month, in quarto form of 32 pages to each monthly number, at \$3 per annum in advance. The last volume may be had either stitched in a cover, so as to be sent by mail, or in boards. Price, stitched, \$3 25; in boards, \$3 50. Each subscriber who pays in advance, or previous to the first of April, free of postage or commission, will be entitled to eight additional pages to each monthly number, or 96 extra pages to the volume. Published at No. 35 Wall street, N. Y. D. K. MINOR, Proprietor. Jan. 22, 1834.

A QUARTERLY JOURNAL OF AGRICULTURE AND MECHANICS will hereafter be published at the same office. Each quarterly number will contain about 300 large octavo pages, embracing the most choice articles from the best agricultural and mechanical publications both in America and Europe. It will form 2 volumes to the year, of about 640 pages each, and will be put up like other quarterly publications, so as to be sent by mail. Price, \$5 per annum, in advance.

N. B. A small edition only will be published. D. K. Minor also publishes the *NEW-YORK AMERICAN*, daily, tri-weekly, and semi-weekly.

Also, the *PLOUGH-BOY*, a cheap agricultural publication, of eight quarto pages, is issued once a week, at \$1 50 per annum, in advance. It contains much interesting reading upon agriculture, &c.

All Letters and Communications for the above publications, may be addressed, free of postage, to D. K. MINOR.

AN INTERESTING AND USEFUL MAP.

A friend of ours has now in a state of forwardness, a Map upon which will be delineated nearly all the Railroads now chartered in the U. States. It is designed to show the present contemplated connexion of the different lines, as well as where others may hereafter be constructed to connect with them. It will be completed in a few weeks, and may be had either in sheets, or put up in morocco for pocket maps, in any quantity, by applying to the subscriber. D. K. MINOR, 35 Wall street. New-York, August 14, 1833.

FOR SALE,

ATLANTIC JOURNAL AND FRIEND OF KNOWLEDGE—A Quarterly Journal, by Professor Rafinesque, of Philadelphia, begun in the spring of 1832, with wood cuts, &c. dedicated to Historical and Natural Sciences, Botany, Agriculture, &c. at one dollar per annum.

MEDICAL FLORA OF THE UNITED STATES, in 2 vols. with 100 plates, containing also the economical properties of 500 genera of American plants. \$3.

MANUAL OF AMERICAN VINES, and Art of Making Wines, with 8 figures. 25 cents.

FISHES AND SHELLS OF THE RIVER OHIO. 1 dollar.

AMERICAN FLORIST, with 36 figures—price 36 cts. Orders for these works, or any other of Professor Rafinesque's, received at this office. A91 J M & F

TO RAILROAD COMPANIES.

PROFESSOR RAFINESQUE, of Philadelphia, will undertake to build CARS that will carry along their own railway, and may be used on level M'Adam roads. They will save ten millions of money to be wasted on 1000 miles of iron railroads to be laid in the United States within a few years, and dispense with tracks and double tracks. These Cars may be drawn by horses or steam. He claims to have discovered them ever since 1825, by his caveats filed in the Patent Office. Apply, post paid. 81 R J M & F

INCOMBUSTIBLE ARCHITECTURE.

INCOMBUSTIBLE dwelling-houses and buildings of all kinds devised or built in New-York, or any part of the United States, as cheap as any other combustible buildings. Actual buildings and houses rendered incombustible at a small additional expense.

SHIPS of all sorts, and Steamboats, rendered incombustible, and not liable to sink, at a small expense.

For sale, 10,000 lbs. of ANTIGNIS, or Incombustible Varnish, at one dollar per lb.

Apply to C. S. RAFINESQUE, Professor of Hist. and Nat. Sciences, Chemist, Architect, &c. in Philadelphia, No. 59 North 8th street. A pamphlet given gratis.

References in New-York.—Mr. Minor, Editor of the *Mechanics' Magazine*; Messrs. Rushton & Asplwall, Druggists. Editors in the city or country, copying this advertisement, will receive a commission on any contract procured by their means. 81 R J M & F

RAILWAY IRON.

				Flat Bars in
Ninety-five tons of 1 inch by 1 inch,				lengths of 14 to 16
200 do. 1 1/2 do. do.				feet counter sunk
40 do. 1 1/2 do. do.				holes, ends cut at
800 do. 2 do. do.				an angle of 45 de-
800 do. 2 1/2 do. do.				grees with splin-
soon expected.				g plates, nails
				to suit

250 do. of Edge Rails of 36 lbs. per yard, with the requisite chairs, keys and pins.

Wrought Iron Rims of 30, 33, and 36 inches diameter for Wheels of Railway Cars, and of 60 inches diameter for Locomotive wheels.

Axles of 2 1/2, 2 3/4, 3, 3 1/2, 3 3/4, and 4 inches diameter for Railway Cars and Locomotives of patent iron.

The above will be sold free of duty, to State Governments and Incorporated Governments, and the Drawback taken in part payment. A. & G. RALSTON.

9 South Front street, Philadelphia.

Models and samples of all the different kinds of Rails, Chairs, Pins, Wedges, Spikes, and Splicing Plates, in use, both in this country and Great Britain, will be exhibited to those desirous to examine them. d71meowr

LOCOMOTIVE ENGINES.

THE AMERICAN STEAM CARRIAGE COMPANY, OF PHILADELPHIA, respectfully inform the public, and especially Railroad and Transportation Companies, that they have become sole proprietors of certain improvements in the construction of Locomotive Engines, and other railway carriages, secured to Col. Stephen H. Long, of the United States Engineers, by letters patent from the United States, and that they are prepared to execute any orders for the construction of Locomotive Engines, Tenders, &c. with which they may be favored, and pledge themselves to a punctual compliance with any engagements they may make in reference to this line of business.

They have already in their possession the requisite apparatus for the construction of three classes of engines, viz. engines weighing four, five, and six tons.

The engines made by them will be warranted to travel at the following rates of speed, viz. a six ton engine at a speed of 15 miles per hour; a five ton engine at a speed of 18 miles per hour; a four ton engine at a speed of 22 1/2 miles per hour. Their performance in other respects will be warranted to equal that of the best English engines of the same class, with respect not only to their efficiency in the conveyance of burthens, but to their durability, and the cheapness and facility of their repairs.

The engines will be adapted to the use of anthracite coal, pine wood, coke, or any other fuel hitherto used in locomotive engines.

The terms shall be quite as favorable, and even more moderate, than those on which engines of the same class can be procured from abroad.

All orders for engines, &c. and other communications in reference to the subject, will be addressed to the subscriber, in the city of Philadelphia, and shall receive prompt attention.

By order of the Company,

WILLIAM NORRIS, Secretary.

December 2d, 1833. For further information on this subject see No. 40, page 772 of this Journal. dt

PATENT RAILROAD, SHIP AND BOAT SPIKES.

The Troy Iron and Nail Factory keep constantly for sale a very extensive assortment of Wrought Spikes and Nails, from 3 to 10 inches, manufactured by the subscriber's Patent Machinery, which after five years successful operation and now almost universal use in the United States (as well as England, where the subscriber obtained a Patent,) are found superior to any ever offered in market.

Railroad Companies may be supplied with Spikes having countersink heads suitable to the holes in iron rails, to any amount and on short notice. Almost all the Railroads now in progress in the United States are fastened with Spikes made at the above named factory—for which purpose they are found invaluable, as their adhesion is more than double any common spikes made by the hammer.

All orders directed to the Agent, Troy, N. Y., will be punctually attended to.

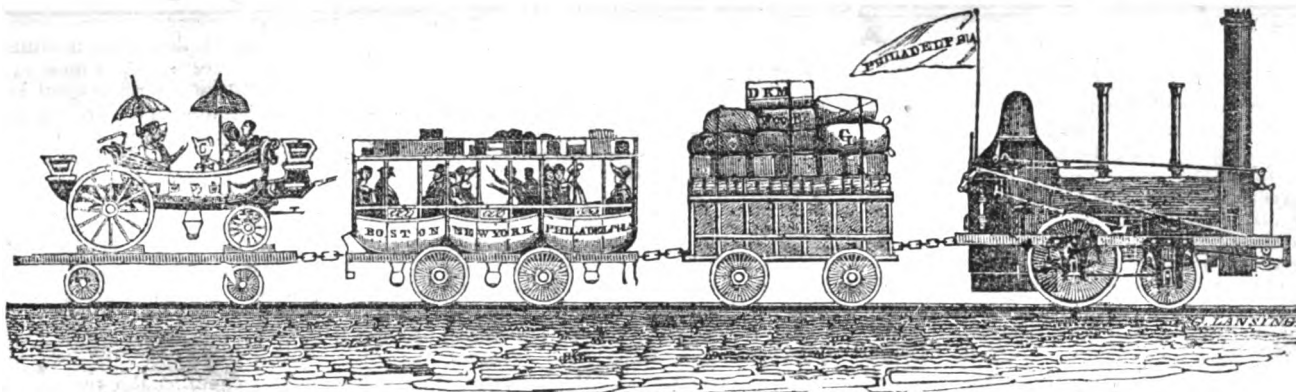
HENRY BURDEN, Agent.

Troy, N. Y. July, 1831.

Spikes are kept for sale, at factory prices, by J. & J. Townsend, Albany, and the principal Iron Merchants in Albany and Troy; J. I. Brower, 229 Water street, New-York; A. M. Jones, Philadelphia; T. Jauviere, Baltimore; Degrand & Smith, Boston.

P. S.—Railroad Companies would do well to forward their orders as early as practical, as the subscriber is desirous of extending the manufacturing so as to keep pace with the daily increasing demand for his Spikes.

H. BURDEN.



AMERICAN RAILROAD JOURNAL, AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT No. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, EDITOR.]

SATURDAY, MARCH 22, 1834.

[VOLUME III.—No. 11.]

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, MARCH 22, 1834.

ERRATA.—In the article on *Blanchard's boat*, page 117, vol 3, No. 8, 1st column, for "Dunkirk," read "*Portland*"; 2d column, for "enterprise of Philadelphia," read "*Pennsylvania*."

PENNSYLVANIA PORTAGE RAILROAD.—By the following extract from the *Pittsburgh Gazette*, we learn that the Portage Railroad is now ready for use. This is a very important link in the improvements in Pennsylvania. It opens a direct intercourse between Philadelphia and Pittsburgh, and notwithstanding the trouble and delay of a transfer of freight from boats to railroad cars, and again to boats, Philadelphia will derive immense benefit from the work.

Portage Railway Office,
Hollidaysburgh, March 13, 1834.

Dear Sir,—It will, doubtless, be gratifying to the citizens of Pittsburgh to learn that the Portage Railroad will be opened for public use on Tuesday, the 18th instant. The Western, Juniata, and Eastern Divisions of the Canal are filled, and ready for transportation—therefore, on that day, a line of communication will be opened, uninterrupted, between your city and Philadelphia.

The rates of Toll to be received on the Portage have been fixed by the Board of Canal Commissioners at double the amount chargeable on the Pennsylvania Canals.

Very respectfully, &c.

S. JONES, Superintendent.

Colonel Macerone's Steam Carriage.—Thursday, the Steam Carriage for which Colonel Macerone and Mr. Squire have obtained a patent, and which has been running from Oxford street to Edgware for the last fortnight, made a trip to Uxbridge, and, notwithstanding the extremely disadvantageous state of the road, owing at once to the long-continued rains, and to the quantity of loose gravel which is at present being laid down upon it, the trial afforded another unequivocal proof of the success which has attended the efforts of the patentees in bringing to a comparative degree of perfection the construction of locomotive carriages. The road, which, even in fine weather, is a very bad one, was, as before mentioned, in the worst possible condition, and yet the journey from the Regent's circus, Oxford street, to Uxbridge, was performed (not taking stoppages into account) in an hour and a quarter. The consumption of time in the stoppages for the purpose of taking in water and fuel was, of course, considerable, but that is a matter that can be easily remedied by the establishment of stations at proper distances, and with suitable apparatus, upon any road on which a carriage of the kind can be started. The first two miles were performed in seven minutes and a half, and the average rate of speed was 12, 14, and sometimes 16 miles an hour. Indeed, it was manifest that in summer, and upon a good road, the coach could go even 20 miles an hour. Up some of the hills, which had been thickly covered with gravel, it went at the rate of eight miles an hour. On his return to town, one of the Oxford stages in full gallop passed it, while taking in water at Kensington. After the lapse of a few minutes the steam carriage followed, came up with the stage, still at full gallop, passed it, and left it "nowhere" ere it had arrived at the commencement of Oxford street. This carriage, we understand, has already run 2500 miles without being detained on the road for a single minute by any derangement of the machinery, save the breaking of the axle-tree on its return from Windsor in last September—an accident to which every other species of vehicle is equally liable, and against the recurrence of which, in the instance of the steam-carriage, the patentees state they have effectually provided. It is the intention of the patentees, we believe, to continue running the carriage for some days longer to the Uxbridge, when it will be discontinued. They at the same time express their willingness to run the carriage, for the purpose of showing the power of the engine, upon any road in the kingdom.—[English paper.]

DIP AND DECLINATION OF THE NEEDLE IN AMERICA.—A manufacturer of compasses at Birmingham would feel much obliged to any of our American or other correspondents, who would supply answers to the following queries: What is the dip and declination of the needle in New-York? and the extent of the variation throughout that and the other states of the North American Union?

On the Location of Railroad Curvatures, being an investigation of the principal formulas required for field operations in laying curves to pass through given points. By J. S. VAN DE GRAAFF. To the Editor of the American Railroad Journal.

SIR,—Having been personally engaged in tracing the various curves for railroad lines, and being frequently under the necessity of making calculations relative to divergent curves and tangents, under a variety of existing circumstances, I was induced to enter into an investigation of certain formulas, embracing the principal cases which usually occur in practice. These formulas, the chief of which I believe to be new, are now offered to you for insertion in your Journal. This is done only with a view to the possibility of adding a small mite to the general stock of information upon that subject; for nothing can be better calculated to produce such an effect than a comparison of the different methods of computation which have been resorted to by different individuals engaged in the solution of such problems. A full investigation of this subject, embracing all the variety of cases which occur in the field, would require too much room in your columns, and I have therefore consulted brevity as much as perspicuity would allow. Very respectfully,

J. S. VAN DE GRAAFF.

ART. 1. Any two points being fixed in the general direction of a route, through which it is proposed to lay a line of railroad composed of several curves and tangent lines, the cost of construction is in most cases not the only requisite datum to fix the definite location of the intermediate points,—for there are very few varieties of ground, except in a very broken country, which will not admit of several different lines connecting the same points, all at nearly an equal expense of construction, and all within the same limits of curvature. It then becomes an object to make such a selection of right lines and curves, and such a distribution thereof, as will produce, at a given expense, the most efficient road.

But no particular rule can be given as a guide for the judicious arrangement of a line; and the general object here proposed is an investigation of such formulas as are required in the field. Let any two rectangular co-ordinate axes be assumed, and take any number of equal

straight lines, originating at the origin of the co-ordinate axes, and connected together at their extremities in such a manner, as that, when each point of connection is joined by a straight line to the origin, these latter lines will form, with one of the co-ordinate axes, a series of angles in *arithmetical progression*. It then follows, agreeably to the principles of elementary geometry, that each point of connection of those equal straight lines, will be situated in the circumference of a circle, passing through the origin, and touching that co-ordinate axis from which the arithmetical series of angles is counted. And this obviously suggests the common method of tracing a circular arc in the field by means of a chain whose length is each of those equal straight lines, and an instrument for measuring the arithmetical series of angles from the tangent line.

In all the formulas which will be deduced in the course of the present inquiry, it must be remembered that all measurements of distance are supposed to be made in chains, or decimal parts of a chain. The chain will therefore be the *unity* of length, and may have any value whatever; but as this will be a constant quantity in the field, it follows that the *curvature* of a line, traced in the manner just described, can only be made variable by different arithmetical series of angles. The *common differences* of these series of angles will therefore be called the *moduli* of curvatures, and will always be denoted by a letter *T*. That co-ordinate axis which coincides with the tangent line will be designated as the axis of *x*; the other being that of the ordinate *y*; and any curve will be considered given, or found, when the modulus of curvature is given, or found.

2. Let a given curve be traced from the origin of a system of rectangular co-ordinate axes, agreeably to the preceding article; it is proposed to investigate formulas which will express the values of the co-ordinates of the station at the extremity of the *n*th chain.

The inclinations of the different chains to the axis of *x*, in succession from the origin, are respectively *T*, *3T*, *5T*, &c.; and consequently their projections upon the co-ordinate axes are obviously $\cos. T$, $\cos. 3T$, $\cos. 5T$, &c., and $\sin. T$, $\sin. 3T$, $\sin. 5T$, &c. respectively. Hence, by taking the sums of those projections, the following equations will result:

$$x = \cos. T + \cos. 3T + \cos. 5T + \dots \dots \dots \cos. \{T \cdot 2n-1\}$$

$$y = \sin. T + \sin. 3T + \sin. 5T + \dots \dots \dots \sin. \{T \cdot 2n-1\}$$

The last term in each of these two series will obviously be the *n*th term; and the sum of *n* terms of each series being taken, agreeably to the known principles of analytical trigonometry, the following formulas will be the result:

$$x = \frac{\sin. 2nT}{2 \sin. T}$$

$$y = \frac{1 - \cos. 2nT}{2 \sin. T}$$

These are the expressions required; and they have that form which is most convenient for computation from a table of natural sines and cosines.

3. To find the radius of curvature.

It is sufficiently evident, that when *n* is made variable, the maximum value of *x* will be the radius of the described circle; but when *x* is a maximum, it follows that $\sin. 2nT$ will also be a maximum when *T* remains constant, as will readily appear from the expressions obtained in the last article. Now, the maximum value of $\sin. 2nT$ is unity, and consequently denoting the radius of the described circle by *R*, the result is,

$$R = \frac{1}{2 \sin. T}$$

4. Take two rectangular co-ordinate axes, having their origin at a given station in a tangent

line, from which a certain required curve is to be laid, passing through a point designated by the co-ordinates *x*, *y*; the given tangent line coinciding with the axis of *x*. Parallel respectively to each of the coordinate axes, let any number of rectangular lines be traced from the origin, and terminating in the point designated for the required curve to meet; these rectangular lines being selected in any convenient manner to pass any obstacle which may happen to occur. Let the algebraic sums of each of these rectangular lines be taken, agreeably to the axis to which they are respectively parallel. These sums will obviously give the values of the co-ordinates *x*, *y*; and from thence it is proposed to determine a formula expressing the value of the modulus of curvature of the required curve.

Let each of the two formulas obtained in art. 2 be squared; and let the second of the two formulas be then divided by the sum of the squares. The following expression will be the immediate result:

$$\sin. T = \frac{y}{x^2 + y^2}$$

And thus the modulus of curvature of the required curve becomes known. This is one of the most important formulas used in the field; for it can be applied under any circumstances, when the designated point is not visible from the origin. If that point can be seen from the origin, the curve sought is usually obtained in a more simple manner.

5. Suppose two curves to be laid upon the same tangent line, and take *b* to denote the distance between their origins. Let one of those curves have a given modulus of curvature denoted by *T*, and let it pass through a given point at the extremity of the *n*th chain. It is then proposed to find the modulus of curvature of the other curve such that it may also pass through the same given point.

The co-ordinates of the given point, taken with reference to the origin of the required curve, will obviously be $x \pm b$, and *y*. Hence taking *T'* to denote the required modulus, it follows from the last article that, $\sin. T' =$

$$\frac{y}{x \pm b^2 + y^2}$$

Now substituting in this expression, for *x*, *y*, their values obtained in art. 2, and the necessary reductions being made, the following formula will be the result:

$$\sin. T' = \frac{1 - \cos. 2nT}{\sin. T} \pm 2b \sin. 2nT + 2b^2 \sin. T$$

This theorem will be found to be quite convenient in the field to answer several different purposes, when the curves are too long to be within the limits of the more simple approximative methods. With regard to the double sign, it must be observed, that the negative value obtains, when the origin of the curve sought is in advance of the origin of the given curve; and the positive value must be taken in the contrary case.

6. If the point designated for the required curve to meet does not coincide with the extremity of the *n*th chain of the given curve, as in art. 5 it is supposed, but varies a small distance to the right or left; yet, if the curves are long, the best method will always be to compute the value of *T'*, as though the required curve were intended to pass through the point considered in that article; and then the requisite small variation in the computed value of *T'*, to meet the case proposed, may be subsequently calculated by very simple approximative methods.

7. Suppose two given curves to be laid upon the same tangent line, and let *b* denote the distance between their origins. Take *T* and *T'* to represent the given moduli of curvatures; and *n* and *m* the number of chains contained in each curve respectively. It is proposed to determine the distance between the extreme stations of those two curves, and the inclination of the two tangents at those two extremities.

I will here take *T* to denote the modulus of curvature of that curve which is most in advance upon the tangent line, with respect to the directions in which the curves are laid from their origins. Let *x*, *y*, and *x'*, *y'*, be the respective co-ordinates of the two extreme stations, each originating at the origin of its respective curve. The difference of co-ordinates, when referred to any common origin on the tangent line, will then be $x + b - x'$, and $y - y'$. Hence, taking *w* to denote the distance sought, the common principle of analytical geometry gives the following expression:

$$w = \{x + b - x'\}^2 + \{y - y'\}^2$$

And from this equation the required distance becomes known; for, by art. 2,

$$\left. \begin{aligned} x &= \frac{\sin. 2nT}{2 \sin. T} \\ y &= \frac{1 - \cos. 2nT}{2 \sin. T} \end{aligned} \right\} \quad \left. \begin{aligned} x' &= \frac{\sin. 2mT'}{2 \sin. T'} \\ y' &= \frac{1 - \cos. 2mT'}{2 \sin. T'} \end{aligned} \right\}$$

The inclination of each tangent to the common tangent at the origins is $2nT$ and $2mT'$ respectively, and $2nT - 2mT'$ will consequently express the required inclination of the two tangents to each other. These two tangents will converge when $2mT'$ is less than $2nT$, and the determination of their point of intersection will be easily effected by the preceding principles.

8. When the two moduli of curvatures *T* and *T'* are equal, the problem considered in the last article becomes much more simple. For the value of *w* being developed, and the values of *x*, *y*, and *x'*, *y'*, substituted for them, and the necessary reductions being made agreeably to the known principles of analytical trigonometry, the following formula is the result:

$$w = \left\{ \frac{1 - \cos. \{2nT - 2mT'\}}{1 - \cos. 2T} + b \times \frac{\sin. 2nT - \sin. 2mT'}{\sin. T} + b^2 \right\} \frac{1}{2}$$

This expression will be useful for a variety of purposes in the field.

9. The formulas which have been investigated in the 8 preceding articles are all *rigorously accurate*; and when long curves are under consideration, which embrace portions of circumferences containing more than 20° or 30° , these formulas will find their application; for in such cases, none of the *usual methods* of approximation are applicable.

The above very brief view of this subject will be only sufficient to illustrate the general fact, that all the necessary formulas are easily made to flow from the two principal formulas given in art. 2. Very useful approximative rules may also be easily derived from those already given; but I cannot continue this inquiry. The subject may perhaps be resumed in some future number of this Journal.

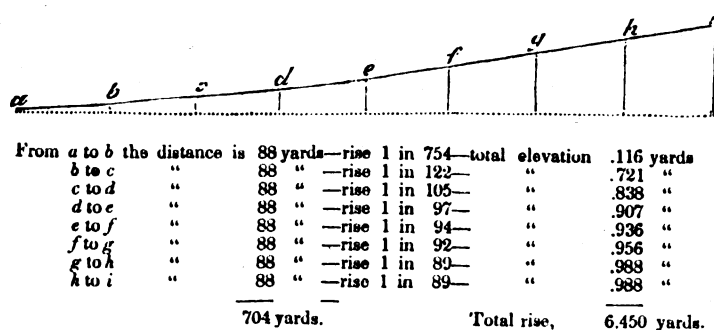
VAN DE GRAAFF.

Lexington, Ky., February, 1834.

The Undulating Railway. [From the London Mechanics' Magazine.]

SIR,—To prevent the possibility of any further misunderstanding in reference to the experiments recently made on the Liverpool and Manchester railway, I have this morning called upon Mr. Booth, and have compared with his statement thereof the following particulars of the rise of the Sutton inclined plane, from its base to a higher point of elevation than any which was attained in our experiments. To render this explanation more clear, on which reliance may be placed, I have accompanied it by a diagram, wherein is denoted the points from which the ascents and descents, during the experiments, were measured.

I am extremely sorry that these particulars have not before been published, as the want of them has evidently produced inconvenience to some of your correspondents, which, had it occurred to me, I ought not to have permitted.



The ascent of the Sutton inclined plane may be said (see diagram) to commence at the point a; although for a distance of 2½ miles before arriving at that point there is a trifling ascent of about 1 in 2,640—viz. from the Sankey viaduct to the foot of the plane.

Now, the series of experiments first published (see No. 531), and which were tried with the Rocket engine, were made from what was considered the foot of the plane, and which in the diagram is marked letter b.

The results of those experiments evidently proved to me that the inclination of that part of the plane on which they were tried was not, as generally supposed, 1 in 96. I perfectly recollect Mr. Sanderson alluding to some supposed error, though why the allusion was "not palatable to me" is a perfect mystery. It was not, however, until after I sent you the particulars of the experiments, and my return to Douglas, that I had an opportunity of making such calculations as led me to call a second time on Mr. Booth, viz. before the trial of the second series of experiments, and explain to him the discrepancy which appeared. For instance, see page 21, experiment 6:—The Rocket engine and a load of 35 tons ascended by momentum 134 yards; the velocity at the foot of the plane being 10 miles per hour, which ascent was equal to 4.1875 feet perpendicular elevation. Now, 10 miles per hour is 14.672 feet per second, and supposing friction out of the question, a body having gained a momentum of 14.672 feet per second, by gravity, would only ascend 3.36355 feet. Thus it was evident to me that 1 in 96 was not the proper inclination of that part of the plane. Previously, however, to the experiments afterwards detailed, the levels were taken afresh by the Messrs. Dixon,* and in the experiments tried with the Liver and load on the 16th (see No. 534,) the ascents were measured from that part of the plane marked x in the diagram, at which point there is a cottage on the railway. On the Sunday following it was agreed by the engineers present that the place of starting should be again changed, and the experiments with the double load were all made from that part of the plane from which the Rocket had ascended, viz. from b. It will naturally occur to your readers—if Mr. Badnall were acquainted with all these particulars, why did he not lay them before the public? The fact is, that I considered the result of the experiments made with the Pluto and Firefly, with the double load, such as to render all explanation unnecessary with regard to the previous trials, and especially as I stated at page 71, that the inclination upon which those latter experiments were tried was about 1 in 99, which will be found to be the average. Moreover, I did not at the time consider a knowledge of the exact inclination of the plane at all necessary to a clear comprehension of the nature and results of the experiments, inasmuch as all I wished to prove was, that whether velocity was generated by one or more engines at the foot of ascent, by which velocity

(either with or without the continued assistance of one engine) a given elevation was surmounted, a greater velocity could be generated by descending the same distance, evidently proving, beyond all rational doubt, the correctness and value of the principle.

The discrepancy alluded to by "Kinclaven" will be explained, I trust, satisfactorily to him, by referring to the statement of the experiment to which he alludes. In that instance the word momentum is not introduced; on the contrary, the whole power of the Liver engine was employed throughout the whole ascent. Had this not been the case, there evidently must have been some great error. I need not say that I shall be most happy, not only to give every further information in my power, but if any of my opponents will propose any further practical test, upon the result of which they will cast the merits of the question, it shall be, if possible, immediately and most impartially tried.

As a proof of the impartiality with which I have recorded the experiments already tried, I refer to all the engineers present, whether the steam of the Pluto (see last experiment) was not shut off 155 yards before she arrived at the starting post, which made a very considerable difference in the rise by momentum. Seeing, however, that I had proved enough, I neither complained at the time, nor have I hitherto published my complaint. The error arose from the two conductors of the engines shutting off the steam of both engines when the flag dropped for the first engine to shut off on passing the mark, letter b.

May I again ask if Mr. Cheverton and "S. Y." will be satisfied that there is an advantage if a given locomotive engine will move, at a given velocity, double the load from summit to summit which she is capable of moving on the level at the same velocity? If so, will they, if not satisfied with the impartial judgment of our northern engineers, attend on an appointed day, of which they shall have due notice, and witness the experiments themselves? If they refuse to attend, and if they disbelieve the results of the experiments already tried, it is needless to make a single further comment on their opposition. On the other hand, if they do attend, and if they do witness a decided proof that a load, which will not move on a level, will move from summit to summit of an undulation at a great velocity, what becomes of the "ASSUREDLY NOT" of the Champion—and why is it necessary that "S. Y." should give such friendly advice to Mr. Ham. and to the subscribers of the great western railway? I am, however, happy in believing, that a full and impartial trial of the undulating principle will soon be made on rather an extensive scale; and I hope "S. Y." will state his practical objections, and that the Champion's rod may be most freely exercised before such trial takes place. As to the sickness which these gentlemen complain of, I am sorry I can administer no better restorative than my regret.

I am, sir, with great respect,

RICHARD BADNALL.

Manchester, November 28, 1833.

P. S.—I observe that "S. Y." makes some allusion to "The Editor of the Manchester Guardian." Probably he is not aware that Mr.

Garnett, the editor, is an opponent of mine, and one for whose mechanical attainments I have a very high opinion.

Improved Method of Packing Pistons. By T. B. S. To the Editor of the Mechanics' Magazine.

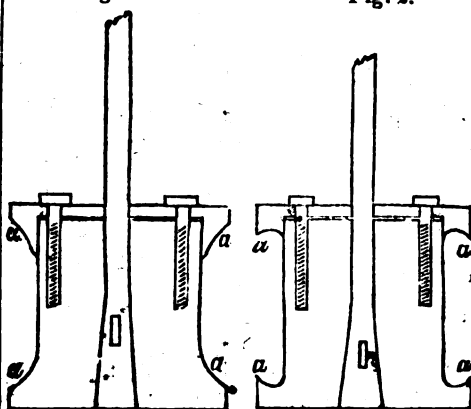
Knowing that many of your readers take a lively interest in whatever contributes to the perfection of the means by which the mighty energies of steam are directed in channels of usefulness, I submit a brief description of an improvement in a minute though an important part of the steam engine. Many expedients have been devised to avoid the use of hemp for the packing of the piston; various metallic substances have been substituted, and numberless other materials long since condemned after repeated trials.

While the piston as adopted by the ingenious Mr. Watt continues in almost universal use, and until a cheap and more enduring piston is discovered, it will doubtless continue to be the favorite plan. In one of its features, however, I consider it susceptible of improvement.

Heretofore engineers have considered it important to form the projecting parts of the piston and follower so as to crowd the hemp outward against the cylinder, as the follower is screwed down to its place. The sketch, fig. 1, is about the form usually given to the

Fig. 1.

Fig. 2.



metallic part of the piston, and shows the form of the recess for the reception of the packing. It is apparent that the obtuseness of the corners at a, a, a, a, are well calculated to avoid the packing as it becomes chafed by friction against the cylinder, while the general shape of the recess greatly conduces to an excessive friction near those angles. Fig. 2 represents the improved form of the piston as I have applied it in several instances, and with success. The acuteness of the edges, a, a, a, a, is calculated to preserve the packing from chafing, to hold it in a body to its place, and will retain it, even though worn to fragments, or otherwise reduced, as it may be liable from a variety of causes. Most of the engines in use have pistons of the former description, and the experiment may be tried with a trifling expense, simply by turning a cavity as near to the form of that in fig. 2 as the substance of the piston will allow.

In the hope that some may derive a benefit from the suggestions, as well as to contribute a mite to the interest of your valuable periodical, I offer them.

I am, yours, &c.

T. B. S.

New-York, Jan. 24, 1834.

* I had also an opportunity of comparing, this morning, my notes on the rise of the inclined plane with Mr. Dixon's, sen., from whom I had originally been favored; with them.

OF COMETS.

Of all celestial bodies, comets have given rise to the greatest number of speculations. In the ages of ignorance and superstition, they were believed to be the harbingers of divine vengeance, and to portend great political and physical convulsions. The most ancient opinion respecting their nature was, that they were enormous meteors formed in the earth's atmosphere. Yet many of the ancients entertained opinions respecting them agreeing with some parts of the *modern* hypothesis respecting these bodies; for they believed that they were so far of the nature of planets, that they had their periodical times of appearing, and that when they were out of sight they were carried aloft to an immense distance from the earth, but again became visible when they descended into the lower regions of the air, when they were nearer to us. Modern astronomers are now generally agreed, that they have no light of their own, and appear luminous only by the light of the sun. They have no visible disc, and shine with a pale whitish light, accompanied with long transparent trains, or tails, proceeding from that side which is turned away from the sun. When a comet is viewed through a good telescope, it appears like a mass of vapors surrounding a dark nucleus of different degrees of opacity in different comets. As these bodies approach the sun their light becomes more brilliant, and after they reach their perihelion, often exceed any of the planets in lustre. Their tails are also observed to increase, both in length and brightness, as they approach the sun. The opinions of astronomers respecting these tails have been very different. Tycho Brahe, who was the first that gave the comets their true rank in the creation, supposed that the tail was occasioned by the rays of the sun passing through the nucleus of the comet, which he believed to be transparent. Kepler thought that it was the atmosphere of the comet which was driven behind it by the force of the solar rays. Sir Isaac Newton maintained that the tail was a thin vapor, ascending by means of the sun's heat, as smoke does from the earth. Euler supposes that the tail is produced by the impulse of the solar rays driving off the atmosphere from the comet. Dr Hamilton, of Dublin, supposes them to be streams of electric matter.

In any of these opinions there is little to entitle it to preference above the others; and till multiplied observations shall have added to the imperfect knowledge which we at present possess of these bodies, it is perhaps better not to give a decided preference to any of them.

From a number of observations made by Sir Isaac Newton on the comet that appeared in the year 1680, he was enabled to discover the true motion of these bodies.

Dr. Halley, following the theory of Newton, set himself to collect all the observations which had been made on comets, and calculated the elements of 24 of them. By computations founded on these elements, he concluded that the comet of 1682 was the same that had appeared in the years 1456, 1531, and 1607; that it had a period of 75 or 76 years; and he ventured to predict, that it would appear again about the year 1758, which it actually did; therefore it may be expected to appear again in the year 1835.

When a comet makes its appearance, it is only for a very short period, seldom ex-

ceeding a few months, and sometimes only a few weeks. Instead of moving from *west* to *east*, like the planets in orbits making small angles with the ecliptic, they are observed to cross it at all angles. Their progress among the fixed stars is in general more rapid than that of the planets, and their change of apparent magnitude is much more remarkable. When a comet retires from the sun, its tail decreases and nearly resumes its first appearance. Those comets which never approach very near the sun have nothing but a coma or nebulosity round them during the whole time of their continuance in view.

The tail of a comet is always transparent, for the stars are often distinctly visible through it, and it has even been said, that on some occasions they have been seen through the nucleus or head. The length and form of the tail are very different. Sometimes it extends only a few degrees, at others it extends more than 90 degrees. In the great comet that appeared in the year 1680, the tail subtended an angle of 70°, and the tail of the one which appeared in 1618, an angle of 104°. The tail sometimes consists of diverging streams of light: that of the comet which appeared in the year 1744 consisted of six, all proceeding from the head, and all a little bent in the same direction. The tail of the beautiful comet which appeared in 1811 was composed of two diverging beams of faint light, slightly colored, which made an angle of 15° to 20°, and sometimes much more. Both of them were a little bent outward, and the space between them was comparatively obscure.

The apparent difference in the length and lustre of the tail of comets has given rise to a popular division of these singular bodies into three kinds, namely, *bearded*, *tailed*, and *hairy* comets; but this division rather relates to the several circumstances of the *same* comet, than to the phenomena of different ones. Thus when the comet is *east* of the sun, and moves *from* him, it is said to be *bearded*, because the light precedes it in the manner of a beard; when the comet is *west* of the sun, and sets after him, it is said to be *tailed*, because the train of light follows it in the manner of a tail; and when the sun and comet are diametrically opposite, the earth being between them, the train or tail is all hid behind the body of the comet, except the extremities, which being broader than the body of the comet, appear to surround it like a border of *hair*, and on this account it is called *hairy*. But there have been several comets observed, whose discs were as clear, round, and well defined, as that of Jupiter, without either tail, beard, or coma.

The magnitude of comets has been observed to be very different; many of them without their *coma* have appeared no larger than stars of the first magnitude; but some authors have given us accounts of others which appeared much greater: such was the one that appeared in the time of the emperor Nero, which, as Seneca relates, was not inferior, in apparent magnitude, to the sun himself. The comet which Hevelius observed in the year 1652 did not seem to be less than the moon, though it was deficient in splendor, for it had a pale, dim light, and appeared with a dismal aspect. Most comets have dense and dark atmospheres surrounding their bodies, which weaken the

sun's rays that fall upon them; but within these appears the nucleus or solid body of the comet, which, when the sky is clear, will often give a more splendid light.

Respecting the nature of these singular and extraordinary bodies, philosophers and astronomers in all ages and countries have been very much divided in their opinions. The vulgar have, however, invariably considered them as *evil omens*, and forerunners of war, pestilence, famine, &c.; and to adopt the language of an old poet,

"The blazing star was viewed—
Threat'ning the world with famine, plague, and war;
To princes death; to kingdoms many cruises;
To all estates inevitable losses;
To herdsmen rot; to ploughmen hapless seasons;
To sailors storms; to cities civil treasons."

The Chaldeans, who were eminent for their astronomical researches, were of opinion that comets were lasting bodies, which had stated revolutions as well as the planets, but in orbits considerably more extensive, on which account they are only visible while near the earth, but disappear again when they ascend into the higher regions. Pythagoras taught that comets were wandering stars, disappearing in the superior parts of their orbits, and becoming visible only in the lower parts of them. Some of the ancient philosophers supposed they were nothing else but a reflection of the beams from the sun or moon, and generated as a rainbow; others supposed they arose from vapors and exhalations. The illustrious Aristotle was of opinion they were meteors. Modern philosophers have been equally perplexed as their predecessors in accounting for the nature of these magnificent celestial appearances.

The eccentric but learned Paracelsus gravely affirmed that they were formed and composed by angels and spirits, to foretel some good or bad events. Kepler, the celebrated astronomer, asserted that comets were monsters, and generated in the celestial spaces by an animal faculty! The sentiments of Bodin, a learned French writer of the 16th century, were yet more absurd; for he maintained that comets are spirits which have lived upon the earth innumerable ages, and being at last arrived on the confines of death, celebrate their last triumph, or are called to the firmament like shining stars!

James Bernoulli, a celebrated Swiss philosopher, formed a rational conjecture relative to comets, in viewing them as the satellites of some very distant planets invisible on the earth on account of its distance, as were also the satellites, unless when in a certain part of their course. Tycho Brahe, the illustrious but unfortunate philosopher of Denmark, supported a true hypothesis on this subject. He averred that a comet had no sensible diurnal parallax, and therefore was not only far above the regions of our atmosphere, but much higher than the moon; that few have come so near the earth as to have any diurnal parallax, yet all comets have an annual parallax; the revolution of the earth in its orbit causes their apparent motion to be very different from what it would be if viewed from the sun, which demonstrates that they are much nearer than the fixed stars, which have no such parallax.

Descartes advanced another opinion, which is, that comets are only stars that were formerly fixed like the rest, but becoming gradually covered with *maculae* or spots, and at length wholly deprived of their light, cannot

keep their places, but are carried off by the vortices* of the circumjacent stars; and in proportion to the magnitude and solidity, moved in such a manner as to be brought nearer to the orb of Saturn; and thus coming within reach of the sun's light, are rendered visible.

The number of comets belonging to the solar system is said not to be less than 450; but the periods of not more than three of these are known. The velocity of these bodies, and their distance from the sun, when in the remotest part of their orbits, exceed all human comprehension. Sir Isaac Newton calculated the velocity of the comet of 1680, and found it to be 880,000 miles per hour, and its aphelion distance not less than 11,200,000,000 miles.

Respecting the use of these bodies, many conjectures have been formed. Mr. Whiston thought it probable that they were appointed by the Almighty as places of punishment for sinners after death, who would be alternately tormented with the most insupportable heat when nearest the sun, and in the opposite point with the greatest possible cold.

Sir Isaac Newton, amongst other purposes which he thinks they may be designed to serve, adds, "that for the conservation of the water and moisture of the planets, comets seem absolutely requisite, from whose condensed vapors and exhalations all the moisture which is spent in vegetation, and turned into dry earth, &c. may be supplied and recruited, for all vegetables grow and increase wholly from fluids; and again, as to their greatest part, by putrefaction into earth. Hence the quantity of dry earth must continually increase, and the moisture decrease, and be quite evaporated, if it did not receive a continual supply from some part or other of the universe;"—and I suspect," adds this philosopher, "that the *spirit*, which makes the finest, subtlest and best part of our air, and which is absolutely requisite for the life and being of all things, comes from the comets."

* Descartes supposed that every thing in the universe was formed from very minute bodies called *atoms*, which had been floating in open space. To each atom he attributed a motion on its axis; and he also maintained, that there was a general motion of the whole universe round like a vortex, or whirlpool. In the centre of this vortex was the sun, with all the planets circulating round him at different distances; and that each star was also the centre of a general vortex round which its planets turned. Besides these general vortices, each planet had a vortex of its own, by which its satellites (if it had any) were whirled round, and any other body that came within its reach.

FRIENDSHIP.—"When fortune smiles, and life is prosperous and fair, then it is that the nominal and true friend may seem alike sincere." Then it is that small and great, rich and poor, bond and free, bow at your shrine and prostrate themselves as it were at your feet. But when unfortunately the dark clouds of sorrow and disappointment gather thick around you, and you find yourself beset with troubles, losses, crosses, and disappointments, on every side, then you are ready to exclaim, "Fortune can create friends, but adversity alone can try them." Your friends of fortune will desert you. They will laugh at your misfortunes, and heap upon you shame and disgrace. They will sink you, if possible, lower, in point of honor and reputation, and in all your attempts to rise, cross and blight you at every turn.

But not so with the true friend. Though all your earthly prospects are cut off, he will

not desert you, but if possible administer to your relief. Let us, therefore, cultivate and cherish that friendship, and that alone which will not diminish, though sorrows oppress and afflictions invade us: that too which will cheer and animate us amid our darkest hours and shine brightest in affliction's night.—[Monthly Repository.]

MANKIND MUTUALLY DEPENDANT.

Not only the correct and excellent sentiments, and the accomplished expression of the following communication, but the source from which it emanated, give it a value for our paper. It is one among numerous compositions furnished by the Ladies' Composition Class of the Boston Wesleyan Lyceum. This piece, like many others which have been prepared by this class, does credit to the intellect and still more to the heart of the author. The sentiment and spirit manifested are those of christian kindness; and if believed and practised by the whole human family, would light up our depraved and forlorn world with the brightness of pure felicity. Who is not ready to try the experiment?

The cold-hearted stoic may boastingly accede to the sentiment, that 'man is sufficient for himself;' but the philanthropist rejoices in the beautiful system of mutual dependance which unites him so closely with the whole human family. He views with pleasure the facilities which the genius of men has supplied for communication with other lands; for contributing to the necessities, convenience and ease of each other, by exchanging the products of different climes; he considers all men as the children of one Parent, improving the advantages with which they are favored, for the benefit of themselves and of their brethren.

Not only do these pleasurable feelings arise in the breast of him whose heart is deeply imbued with love for the whole human race, but a little reflection will excite them in the mind of one whose views are more selfish and contracted; and constrain him to acknowledge the wisdom of a system for the division of labor, and for the promotion of friendly intercourse, which mankind, as it were by mutual consent, have so universally adopted.

Every vocation in life depends on many others for its support. The agriculturists of New-England, said to be the most independent class of people, may be adduced as examples in favor of this assertion; the toils of the blacksmith, the carpenter, &c. are all put in requisition to enable them to cultivate the soil to advantage.

The rich are dependant on the poorer classes, and the poorer classes on the wealthy: without the former, commerce and manufactures would languish—and deprived of the latter, the fatigues of manual labor would be added to those mental vexations from which the affluent are seldom exempt.

The young look to their superiors in years for counsel and instruction, and the aged to the vigor of youth and manhood for support.

A mutual dependance exists between the inhabitants of one clime and those of another; the wealth of one nation is comprised in its mines of silver and gold, that of another in the products of its soil. Those who depend on the latter may be considered as peculiarly favored; for where the former exist, those arts which constitute the happiness and prosperity of a people are almost invariably neglected. From this circumstance, indolent habits, both of body and mind, are induced, and these in their turn generate many vices.

To the conquests of the Spanish in America, may be attributed the low state of morals, literature, and science, which prevails among them; for finding that they had ac-

quired, with an extensive territory, a resource for the supply of all their wants, the natural advantages of their natal land were disregarded.

The advantages occurring from this system of mutual dependance are many; the division of labor, or the devotion of every man's talent to some particular trade or profession, is an economy, not only of time, but of health and of money.

Should one man engage in the pursuits which are now apportioned among many, much time would be lost in the acquisition of knowledge in various branches; his health would be impaired from the attention bestowed on them; his gain would not be in ratio to the expenses incurred; and no opportunity would be afforded of attaining to perfection in any.

From the consideration that we are continually reciprocating favors with our fellow beings, and that there are none so humble as not to be able to render us assistance in one way or another, we should be excited to kindness and humility; under the influence of so beneficent a system, the asperities of life should lose their keenness, and all the social feelings of our nature be expanded. M. O.

MECHANICS' WIVES.—Speaking of the middle ranks of life, a good writer observes:

"There we behold woman in all her glory: not a doll to carry silks and jewels, not a poppet to be flattered by profane adoration, revered to-day, discarded to-morrow; always jostled out of the place which nature and society would assign her, by sensuality or by contempt; admired, but not respected; desired, but not esteemed; ruling by passion, not affection; imparting her weakness, not her constancy, to the sex she would exalt; the source and mirror of vanity. We see her as a wife partaking the cares and cheering the anxiety of a husband, dividing his toils by her domestic diligence, spreading cheerfulness around her; for his sake sharing the decent refinements of the world, without being vain of them; placing all her joys and her happiness in the man she loves. As a mother, we find her the affectionate, the ardent instructress of the children whom she has tended from their infancy; training them up to thought and virtue, to piety and benevolence; addressing them as rational beings; and preparing them to become men and women in turn. Mechanics' daughters make the best wives in the world."

RIDING.—On which side of the lady, on horseback, should the gentleman ride?

The translator of the Principles of the Art of Modern Horsemanship says: "When a gentleman accompanies a lady on horseback, he should take the left side of her horse. The custom of taking the right side is derived from the English mode of riding. The law of England directs the left hand to be taken; the gentleman therefore takes the right, to protect the lady from vehicles, &c. which pass on her left. Here the law directs the right hand of the road to be taken, consequently the gentleman should take the left side of the lady's horse. It seems to be best adapted to afford efficient assistance, whatever may occur. The right hand of the gentleman is perfectly free, and may be used either to stop the horse or rescue the lady from danger. He can on this side aid her in disentangling her dress, disengaging her foot from the stirrup, adjusting her reins, and lifting her off her seat, without exposing her to the accidents which might occur to him if he attempted to give her assistance from the other side. It is not so easy to afford assistance to the lady with the left hand, nor is it so easy for the rider to command his own horse with the right hand."

THE CHASSEUR ANTS OF TRINIDAD.—One morning my attention was arrested at Laurel Hill by an unusual number of black birds, whose appearance was foreign to me; they were smaller but not unlike an English crow, and were perched on a calabash tree near the kitchen. I asked the house negress, who at that moment came up from the garden, what could be the cause of the appearance of those black birds? She said, "Misses, dem a sign of the blessing of God; dey are not the blessing, but only de sign, as we say, of God's blessing. Misses, you will see afore noon-time how the ants will come and clear the houses." At this moment I was called to breakfast, and thinking it was some superstitious idea of hers, I paid no further attention to it.

In about two hours after this, I observed an uncommon number of *chasseur ants* crawling about the floor of the room: my children were annoyed by them, and seated themselves on a table, where their legs did not communicate with the floor. The ants did not crawl upon my person, but I was now surrounded by them. Shortly after this the walls of the room became covered by them; and next they began to take possession of the tables and chairs. I now thought it necessary to take refuge in an adjoining room, separated only by a few ascending steps from the one we occupied, and this was not accomplished without great care and generalship, for had we trodden upon one, we should have been summarily punished. There were several ants on the steps of the stair, but they were not nearly so numerous as in the room we had left; but the upper room presented a singular spectacle, for not only were the floor and the walls covered like the other room, but the roof was covered also.

The open rafters of a West India house at all times afford shelter to a numerous tribe of insects, more particularly the cockroach, but now their destruction was inevitable. The *chasseur ants*, as if trained for battle, ascended in regular thick files, to the rafters, and threw down the cockroaches to their comrades on the floor, who as regularly marched off with the dead bodies of cockroaches, dragging them away by their united efforts with amazing rapidity. Either the cockroaches were stung to death on the rafters, or else the fall killed them. The ants never stopped to devour their prey, but conveyed it to their storehouses.

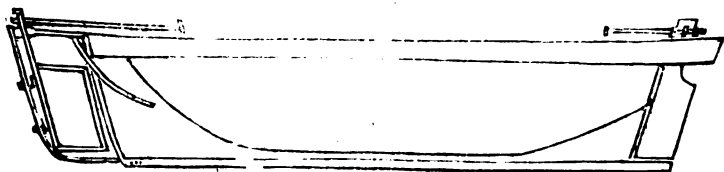
The windward windows of the room were of glass, and a battle now ensued between the ants and the *jack-spaniards* on the panes of glass. The *jack-spaniards* may be called the wasp of the West Indies; it is twice as large as the British wasp, and its sting is in proportion more painful. It builds its nest in trees and old houses, and sometimes in the rafters of a room. These *jack-spaniards* were not quite such easy prey as the cockroaches had been, for they used their wings, which not one cockroach had attempted to do. Two *jack-spaniards*, hotly pursued on the window, alighted on the dress of one of my children. I entreated her to sit still, and remain quiet. In an inconceivably short space of time, a party of ants crawled upon her frock, surrounded and covered the two *jack-spaniards*, and crawled down again to the floor, dragging off their prey, and doing the child no harm. From this room we went to the adjoining bedchamber and dressing-room, and found them equally in possession of the *chasseurs*. I opened a large military chest full of linens, which had been much infested; for I was determined to take every advantage of such able hunters. I found the ants already in possession of the inside: I suppose they must have got in at some opening at the hinges. I pulled out the linens on the floor, and with them hundreds of cockroaches, not one of which escaped.

We now left the house and went to the chambers built at a little distance, but these were also in the same state. I next proceeded to open a store-room at the end of the other house for a place of retreat, but to get the key I had to return to the under room, where the battle

was now more hot than ever. The ants had commenced an attack on the *rats* and *mice*, which, strange as it may appear, were no match for their apparently insignificant foes. They surrounded them as they had the insect tribe, covered them over, and dragged them off with a celerity and union of strength that no one who has not watched such a scene can comprehend. I did not see one rat or mouse escape; and I am sure I saw a score carried off during a very short period. We next tried the kitchen, for the store-room and boys' pantry were already occupied, but the kitchen was equally the scene of battle between rats, mice, and cockroaches, and ants killing them. A huckster negro came up selling cakes, and seeing the uproar, and the family and servants standing out in the sun, he said, "Oh, Misses, you've got the blessing of God to-day, and a great blessing it is to get such a cleaning."

I think it was about ten when I first observed the ants; about twelve the battle was formidable; soon after one the great strife began be-

tween the rats and the mice; and in about three the houses were cleared. In a quarter of an hour more the ants began to decamp, and soon not one was to be seen within doors. But the grass around the house was full of them; and they seemed now feeding on the remnants of their prey, which had been left on the road to their nests; and so the feasting continued till about four o'clock, when the black birds, who had never been long absent from the *calibash* and *pois doux* trees in the neighborhood, darted down among them, and destroyed by millions those who were too sluggish to make good their retreat. By five o'clock the whole was over: before sundown, the negro houses were all cleared in the same way; and they told me that they had seen the black birds hovering about the almond trees close to the negro houses as early as seven in the morning. I never saw the black birds before or since, and the negroes assured me that they were never seen but at such times.—[Mrs. Carmichael on the West Indies.]



A Bow Rudder. By W. ALDERSEY. [From the United Service Journal.]

The following plan is proposed for fixing and working a rudder at the bow of a vessel, to act in unison with the rudder at the stern, as calculated to embrace all the advantages proposed by that experienced and highly respectable officer in the East India Company's service, Capt. William Manning, as stated in p. 541 of the United Service Journal for December, 1831; and which, I think, will also be found to meet the objections of W. J. T. of Cambridge, page 260, in the number for October, 1832.

The plan consists in fixing an additional stem, made of iron, of sufficient strength, on the present stem of the vessel (already built), and securing the same by strong braces fixed securely on the bow, and hanging the rudder on the additional stem at the bow, precisely in the same way as the rudder at the stern is hung, as shown in the drawing.

The following results may be expected: 1st, The rudder at the stem is intended to act in unison with the rudder at the stern, by which means the same force would be exerted at each end of the vessel, and would unite in effect to bring the vessel round to the wind, and prevent her missing stays; 2d, When before the wind, or nearly so, the rudder on the stem might be allowed to swing, or be fixed, as thought necessary; 3d, When the tiller at the stem is put a little to leeward, and the rudder at the stern is made to act in unison with it, their combined influence would very much tend to keep the vessel to windward; 4th, The rudder at the stem would be an additional security in case of accident to the rudder at the stern, to which it is liable from going over a bar, and from other causes; 5th, The additional rudder at the stem appears particularly suitable for steam vessels, by which means the steersman at the bow would have it in his power to discover, and instantly avoid, every impediment in the ship's course; and would be particularly useful at night, and in foggy and boisterous weather, and in rivers crowded with vessels, both moving and stationary.

In the drawing, the keel is lengthened to

the extremity of the foot of the rudder, to show an easy and safe mode of protecting it from accident, when the ship touches the ground at the stern. In building a new vessel, the keel may be carried out, in the first instance, of sufficient length to have the additional stem built in the frame of the vessel to receive the bow rudder; and the tiller may be made in any form, and applied in any way, most convenient.

POPULAR ERRORS IN MEDICINE.—[By an Edinburgh Physician.]—A very common practice in eating such fruit as cherries is to swallow the stones, with the vague notion that these promote digestion. No error can be more fatally absurd. Many cases have occurred where such practices have been the cause of death, and that of a very excruciating nature. One instance is on record of a lady who died in great agony after years of suffering, and the cause was found to be several large balls lodged in the intestines, accumulated around clusters of cherry stones. The husks of gooseberries are often swallowed with the idea that they prevent any bad effects from the fruit. On the contrary, they are the most indigestible substance that can be swallowed, and pass the stomach without any change, although they cause excessive irritation, and not unfrequently inflammation in the bowels.

Many people put great faith in the wholesomeness of eating only of one dish at dinner. They suppose that the mixture of substances prevents easy digestion. They would not eat fish and flesh, fowl and beef, animal food and vegetable. This seems a plausible notion, but daily practice shows its utter absurdity. What dinner sits easier on the stomach than a slice of roast or boiled mutton, and carrots or turnips, and the indispensable potato? What man ever felt the worse of a cut of cod or turbot followed by a beef-steak, or a slice of roast beef and pudding? In short, a variety of wholesome food does not seem incompatible at meals, if one do not eat too much—here the error lies.

It is a practice with bathers, after having walked on a hot day to the sea-side, to sit on the cold rocks till they cool before going into the water. This is quite erroneous. Never go into the water if over-fatigued, and after profuse and long-continued perspiration, but always prefer plunging in while warm, strong and vigorous, and even with the first drops of perspiration on your brow. There is no fear

of sudden transitions from heat to cold being fatal. Many nations run from the hot bath and plunge naked into the snow. What is to be feared is sudden cold after exhaustion of the body, and while the animal powers are not sufficient to produce a reaction or recovery of the animal heat.

There is a favorite fancy of rendering infants and farther advanced children hardy and strong by plunging them into cold water. This will certainly not prevent strong infants from growing stronger, but it will, and often does, kill three children out of every five. Infants always thrive best with moderate warmth and a milk-warm bath. The same rule applies to the clothing of infants and children. No child should have so slight clothing as to make it feel the effects of cold—warm materials, loose and wide-made clothing, and exercise, are all indispensable for the health of little ones. But above all things, their heads should be kept cool, and generally uncovered.

Many people so laud early rising as would lead one to suppose that sleep was one of those lazy, sluggish, and bad practices, that the sooner the custom was abolished the better. Sleep is as necessary to man as food, and as some do with one-third of the food that others absolutely require, so five hours' sleep is amply sufficient for one, while another requires seven or eight hours. Some men cannot by any possibility sleep more than four or five hours in the twenty-four; and, therefore, true to the inherent selfishness of human nature, they abuse all who sleep longer. No man should be taunted for sleeping eight hours if he can.

Many people do not eat salt with their food, and the fair sex have a notion that this substance darkens the complexion. Salt seems essential for the health of every human being, more especially in moist climates such as ours. Without salt, the body becomes infected with intestinal worms. The case of a lady is mentioned in a medical journal, who had a natural antipathy to salt, and never used it with her food; the consequence was, she became dreadfully infected with these animals. A punishment existed in Holland, by which criminals were denied the use of salt; the same consequence followed with these wretched beings. We rather think a prejudice exists with some, of giving little or no salt to children. No practice can be more ridiculous.

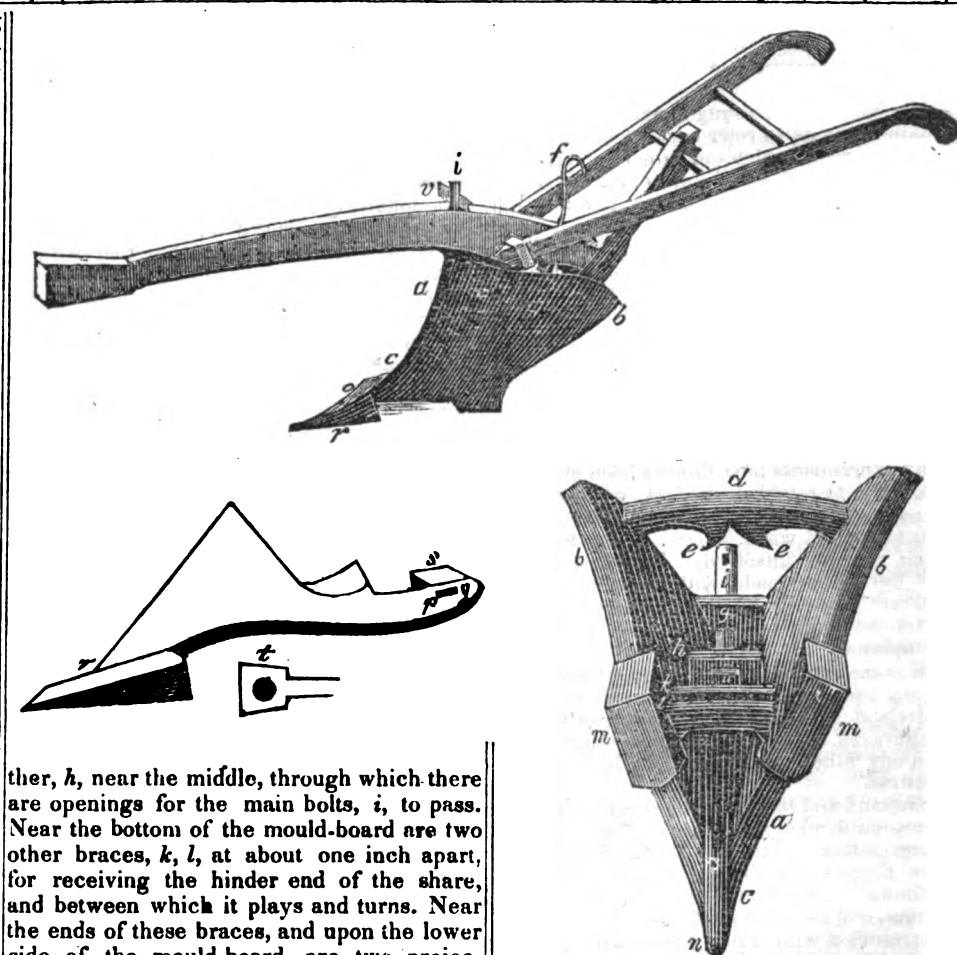
AGRICULTURE, &c.

C. H. McCormick's Self-Sharpening Horizontal Plough. [Communicated by the Inventor for the Mechanics' Magazine.]

Be it known, that I, Cyrus H. McCormick, of Rockbridge county, and State of Virginia, have made an improvement in the useful arts, being a "self-sharpening horizontal plough," which is described as follows:

This plough, like most others, consists of a beam, handles, helve, mould-board, and share. In addition to these there is a latch-rod to make fast the mould-board and share, when changed to either side, and a main bolt to support the mould-board.

The beam, handles, and helve, are similar to those employed in other ploughs. The mould-board, represented at *a* in the annexed drawings, is made double, of cast iron, curved somewhat like other mould-boards, on both sides. The wings, *b b*, are united in part at *c*, and extend outward, making a suitable angle for turning over the earth. There is a brace, *d*, extending between the two wings, behind, supporting them firmly with projections, *e e*, on one side, for receiving the latch-rod, *f*, when changing the plough. Between the wings on the top, and near the front, is a brace, *g*, and another, *h*, near the middle, through which there are openings for the main bolts, *i*, to pass. Near the bottom of the mould-board are two other braces, *k, l*, at about one inch apart, for receiving the hinder end of the share, and between which it plays and turns. Near the ends of these braces, and upon the lower side of the mould-board, are two projections, *m m*, upon which the mould-board slides alternately. These projections can either be cast solid, with the mould-board, or be made of steel or cast iron, and be rivetted on. These projections serve also to hold and support the share when turned. At the front end of the mould-board is cast on it a projection, *n*, which serves as a pivot, on which the share turns.



The share, *o*, is made of cast or wrought iron, in a triangular shape. It consists of the neck, *p*, (with or without a head,) and a slat, *g*, for a key, placed behind the braces; also, a point, *r*, either cast on the share or made separately, and fastened on it by being rivetted, or otherwise.

There is also a shoulder, or projection, *s*, by means of which and the latch-rod the share is kept in its place when changed. In the hinder end of the point is a cavity, *t*, to admit the point on the mould-board, upon which and the neck the share turns.

The main bolt, *i*, is made of wrought iron, and passes through the beam, and the two openings in the braces of the mould-board before mentioned having a head, *u*, on the lower end, and either a screw or key, *r*, on the head above the beam.

The latch-rod, *f*, is a plain curved rod of wrought iron, which extends from above the beam to the neck of the share, and is moveable from one side of the beam and mould-board to the other, passing between the beam and the projections on the brace of the mould-board, and entering between the neck of the share and the wing of the mould-board, and by which the mould-board and share are screwed in the position required.

OPERATION.—When required to plough on a hill-side, say the declination of the hill is on the right, the right wing of the mould-board and share must stand out from the beam

to the right, and the other wing of the mould-board being nearly parallel with the beam, forms the land-side, the latch-rod being put in its proper place. One furrow being made in this position, the latch-rod is taken out, and turning the plough, resting on the share, the share is turned on the point of the mould-board, to the other side, or left, and the mould-board also changes sides. The left wing projecting out to the left, the right wing forming the land-side, the latch-rod is passed between the other side of the beam and the other projection on the brace, the points entering again between the neck of the share and other wing of the mould-board, which pressing the shoulder on the share, above that on the mould-board, makes it fast. The neck of the share might be made to turn on a pivot or collar on the centre, instead of the opening between the braces. A nail or pin is driven in the helve, below the brace, to prevent the mould-board from sinking behind, or the beam from rising, to steady the plough.

The invention here claimed, and desired to be secured by letters patent, consists in the peculiar arrangement and construction of the several parts of the plough, as before described, and particularly the mode of forming the point at the end of the mould-board on which the share turns; and the two braces with the space between them, in which the neck of the share works; the brace near the centre of the mould-board; the two projections on which the mould-board slides; and the share, with the mode of turning and fastening it by the latch-rod.

Done at the city of Washington this 29th day of October, 1833.

CYRUS H. MCCORMICK.

HEDGING.—To ascertain in what way fields can be kept enclosed, with the least expense, is a matter of importance to every farmer in our country.

As a nation we are young in agriculture, and it is natural for us to refer back to those parts of the world from which our fathers emigrated for example, to aid us in our conclusions, on many subjects connected with our pursuits in life.

In order to form correct conclusions, in matters appertaining to agriculture, many things must be taken into consideration. The difference in the climate and soil of different countries is so great, that the course of cropping pursued in one country may be altogether improper for another; and plants which are found to succeed well in one climate on particular soils, may require different soils in other climates, or may not succeed at all on any soil.

Many experiments have already been made in this country, to establish the fact, whether, or not, hedges of any kind could be substituted for our stone and wood fences. Thus far the problem remains unsolved. Various experiments have been made with different plants, by different persons, and the results and reports have tended more to confuse than establish public opinion.

In looking abroad for examples, whereon to found our opinions, we naturally refer to England, Ireland, and France, as countries where agriculture as a science is better understood than in any other with which we have much intercourse.

In England and Ireland, hedges are more extensively cultivated, we believe, than in any other agricultural country. The soil and climate of England and Ireland may be counted very similar. The soil is of a rich secondary formation, and from their limited extent and being surrounded with water, the climate is temperate and humid. In summer the temperature rarely exceeds 75°, and during winter it seldom descends lower than 25° above zero, a variation not so great as has been known in this country within a few days.

From the scarcity of timber, and the consequent high price, methods are resorted to for enclosing their fields besides fencing with wood. Whenever stone can be procured at reasonable rates, they are preferred by farmers of every country to either wood fences or hedges.

Although from the peculiarities of the climate of England they have been successful in cultivating hedges, yet in France, where the temperature may be called temperate compared with ours, they did not find it for their interest to attend to their cultivation.

In England and Ireland the plant mostly cultivated for hedges is the quickset Haw-thorn, *Crataegus oxyacantha*, a native of Britain, and is admirably calculated for that purpose. In France, where the climate is more warm and dry, the Haw-thorn does not flourish well; insects injure it, and it becomes covered with moss, stunted, and dies.

In America, or in this section of the United States, our summers are much warmer than they are in France, and our winters more severe, and we have never seen a haw-thorn hedge with us that had that healthy appearance that they have in England, which we consider as proof positive that our climate is not as congenial to their growth as that of the country in which they are found growing spontaneously.

The first proposition to be solved by our farmers is in what manner can their fields be securely fenced for a length of time at the least expense. To answer this, all circumstances must enter into the calculation.

Allowing that it is thought advisable in any locality in our country to attempt the cultivation of hedges, then it becomes important to know what plants will succeed best in a given locality.

On inquiring into the natural location of plants, we find them in belts extending from east to west, across continents, varying from a direct line, according to the humidity and temperature of the atmosphere and the nature of the soil on which they grow.

With plants, as with animals, different species require different degrees of heat to insure health, added to which light and moisture have material influence.

On inquiring for plants suited to different locations, not only is the natural climate of the plant to be consulted, but the growth and habits of it are equally important.

The following is a list of those plants which have been recommended for hedging by different writers on the subject, together with a short description of their habits, and the country from which they have been brought or where they are found growing naturally.

THORN.—This is a common name applied to a numerous family, many of which have been used for hedging from time immemorial; as the limbs of the different kinds are more or less armed with sharp spines or thorns, they are well calculated for this purpose.

HAW-THORN—*Crataegus oxyacantha*.—This is the common hedge thorn of England. It is a native of Britain, where it grows to the height of fifteen or twenty feet, with many small limbs, which are armed with abundance of small sharp spines. It is found to be the best plant for hedging in England and Ireland that has ever been cultivated for that purpose.

EVER-GREEN THORN—*C. pyracantha*.—This is a native of the south of Europe, and has been cultivated for hedges, but is less valuable for that purpose than the preceding.

COCKSPUR THORN—*Scarlet flowering, Pear leaved, Yellow fruited*, and some others, are natives of America, are of larger growth than the hawthorn, and the limbs do not interlace as well. Most of the species of thorn are subject to be injured by insects during summer and field mice during the winter, in addition to which the stocks become in many localities covered with moss. We cannot recommend any of the above for hedges in this part of the state. They may be propagated from seed, which should be buried one year in the earth, after which they should be taken up and planted in rows as other seeds in the nursery.

HONEY LOCUST—*Gleditsia Triacanthus*.—This is a native North American tree, found growing in the forests of the middle states, where it often attains the height of sixty feet, with a trunk proportioned to its height.

This tree has been recommended for hedging, but it is found impossible to keep it in a dwarf state. The limbs are large and not suitable for interlacing. As it is a native of the southern and middle states, it does not well endure our northern winters when young.

PRICKLY ASH—*Zanthoxylum fraxineum*, and *tricarpum*.—Both these varieties are native American shrubs growing to the height of eight or ten feet, the limbs are armed with short thorns. These shrubs spread so much by sprouting from the roots that either of them would prove very troublesome when set for hedge.

BARBERRY or BERBERIS—*Berberis canadensis*.—This is an American shrub which infests many parts of the New-England states, growing to the height of six or eight feet, with upright stems, which are armed with slender sharp spines. Although we have long seen this shrub growing about fences, we do not recollect to have seen it treated as a hedge. From the strong prejudice there is against it, entertained by the New-England farmers, we think it would be difficult to induce them to cultivate it.

BUCK THORN—*Rhamnus catharticus*.—The English botanists claim this a native of Britain, and Professor Eaton says that it is found growing wild in New-England. From experiments made by E. H. Derby, Esq. of Massachusetts, it would appear that this is one of the most valuable plants for hedges in the northern states that has ever been tried. In this country it attains to the height of fifteen or twenty feet, the limbs are not long but thick, and are set with sharp spines. It endures the severity of our northern winters, and is not subject to be injured by insects. It is readily cultivated from seed, which are produced abundantly by old

trees. [See Report of the Massachusetts Society, with Mr. Derby's communication annexed, page 15 of Appendix to New-York Farmer, for March, 1834.]

OSAGE ORANGE—*Maclura aurantica*.—This is an American shrub, found on the banks of the Arkansas and some other southern streams. The foliage is of a deep green, somewhat resembling that of the orange, and the limbs are set with sharp thorns. It does not endure our northern winters.

APPLES.—Both the common and crab apples have been tried for hedges in this latitude, but neither have succeeded so as to bear recommendation for this purpose. Like thorns, they are liable to be destroyed by insects in summer and by mice in winter.

If there is any tree or shrub that we can recommend to farmers at this time for the purpose of substituting for wood and stone fences, with hopes of being more economical, it is the *White Italian Mulberry—*Morus alba**.

Professor Rafinesque, of Philadelphia, in speaking of different trees and shrubs with regard to their qualities for hedging, says, "I have left for the last this most valuable tree. It bears cutting, and is often raised in silk countries as a shrub and hedge, to collect the leaves easier. Grows with the utmost facility, lasting sixty years at least."

This tree, which is a native of China, appears perfectly naturalized in this country, or at least, coming from a country where the climate is not altogether different from our own, thrives well. It is easily cultivated, either from seed or cuttings. It grows to the height of thirty or forty feet, and somewhat resembles our common apple in shape and size.

As it appears well established now, that the raising of silk-worms and the making of silk in this country will be attended with a corresponding profit with other farming operations, there can be no danger in cultivating mulberry hedges, as it is allowed that it is the most profitable way to raise them when intended only for worms, and if they will answer the double purpose of feeding silk-worms and as a substitute for fences, the inducements to raise them must be very great.

When it is designed to raise plants from seed, they should be sown in the fore part of May, and one ounce of seed is thought to be sufficient for raising from eight to ten thousand trees.—[Goodsell's Genesee Farmer.]

CULTIVATION OF NATIVE GRAPE.—N. Longworth, Esq. has experimented extensively in the culture of American grapes. His opinions are, therefore, entitled to attention. We give an extract from an address recently delivered:

"I have found no foreign grape that will pay the expense of open culture in our climate. Native vines, planted on ground with no other preparation than deep ploughing, have thus far succeeded better than those on steep side-hills, where the ground was prepared with great expense. Those parts of my vineyards fully exposed to the north have often ripened their fruit better than those with a southern exposure. Some of the finest wines of France are made in a northern latitude, and on hills fully exposed to the north.

"Others are deterred from the cultivation of the vine, from an impression that great skill is necessary. The vine requires less science in its cultivation than the peach or apple tree; and the manufacture of wine is a more simple process than that of cider. Cleanliness and a careful exclusion of unripe and decayed fruit are the great requisites. Wines may be improved after they are completed, by a mixture of the strong with the weak, the dry with the sweet, the flavorless with that possessing a high flavor; but this is the province of the wine-merchant.

"Again, it is said we cannot succeed with the manufacture of wine, because the addition of sugar is necessary to our grapes to give them the requisite sweetness. I have wine of my

own manufacture, now six years old, the pure juice of the grape. But in all wine countries, unless it be in those where light hard wines are made, sugar is added, or its equivalent. In Madeira, Xerxes, Oporto, various methods are resorted to. The grapes are suffered to hang till a bunch of raisins can be plucked—or a portion of the must is boiled down, till its fermenting quality is destroyed, and its saccharine nearly doubled, or a portion of the unfermented must is mixed with such a quantity of brandy as to stop the process of fermentation, and these are added to the must or wine. After the wine is perfected, from five to twelve per cent. of brandy is added. Even in the sunny clime of Italy, to enable their wine to keep without the addition of sugar, they boil the must, and the wine so made is called 'Vino Cotto.' In Germany and France, sugar is frequently added. But in all these cases the fermentation is checked before its completion, and the leaven precipitated by sulphuring and frequent racking. From experience, I am perfectly satisfied that it is immaterial whether the saccharine principle be in the grape or added to the must in the form of sugar.

"The reason so many have failed in the manufacture of domestic wine, is that, instead of making American wine, they have, by the process of manufacture, attempted to produce an imitation of popular foreign wines.

"The Schuykill, Muscadell or Cape grape, the Isabella or Catawba, are the American grapes most in use for the manufacture of wine. The first by age becomes a good wine. The second will make a rich, sweet wine, by the process of manufacture necessary to accomplish this object, but it does not improve by age. From the Catawba, Major Adlum makes a rich, sweet wine. The wine which I manufacture from this grape is a light, dry wine, resembling those of the Rhine, and will successfully compete with any of them, but they are wines now for the first time coming in use among us, and command a high price.

"I have two other native grapes under cultivation, from which I have yet made only a few quarts of wine of great promise. They are also first-rate table grapes. The best wine of American manufacture that I have seen resembling Madeira, is made by a French gentleman of great intelligence, in S. Carolina, Mr. Herbe-mont. He sent me a sample. It is made from a grape called the Warren, or Herbe-mont's Madeira. I obtained this grape from him four years since, and do not hesitate to pronounce it an American grape, common in North Carolina, and to be found as far west as Missouri. As a table grape, it is equal to many imported varieties.

"In deciding how far the grape may be cultivated with us for profit, experience is better than theory. Nine years since I bought thirty acres of very broken ground four miles from the city, for which I paid three hundred dollars. There were about fifteen acres of cleared land, and about one half tillable. On this place I put an elderly German with a small family. He was to plant and cultivate a vineyard and have one half the product. Every thing raised by him on the place was for his own use. He spoke no English; was not worth ten dollars; and possessed of no learning. The vineyard was neglected, and made a secondary object; whilst he supported his family by raising vegetables for market. At the end of seven years his vineyard was less advanced than it should have been at the end of four years. The eighth year a part of his vineyard produced one thousand seven hundred gallons of wine to the acre. This encouraged him: his garden was neglected and his attention devoted to the vineyard. This season, 1833, his share of the wine will enable him to purchase from the government five hundred acres of land; and he has already made a purchase for each of his children. He can cultivate the grape as his fathers have done before him, in Germany; but he can make no changes to suit the difference of our climate, and I would sooner de-

pend upon a man of good common sense, who had no experience in its cultivation, than most of the German vinedressers. I name this, not in disparagement of a frugal industrious part of our population, but to remove an impression that foreigners only are competent to the cultivation."

DUTCH CHURNS.—When the churning process was going on, I have observed the outside of the churn wrapped over with cloth, which I was told was for the purpose of keeping the outside clean. The Dutch have various ways of working the churn. At the large dairies it is generally with a horse; this I observed near Delft, at Ter Leide, near Leyden, and near Leuwarden, in Vriesland; at others they are churned by the hand, by turning a large fly-wheel,



(figure 1.) At Almenaar, near Harlingen, I saw a churn made to go by the feet, the weight of the body being moved alternately from one side to the other, on a platform fixed on a pivot (fig-



ure 2); to the one end of the platform a stalk being attached, which moved the churn-handle attached to another pivot. I observed at a farm near Gouda, that the churn was made to work from the ceiling in a very easy way; a piece of wood in the shape of an obtuse angle, was attached at the elbow to a pivot in one of the beams of the ceiling; the churn-stick was attached to the one end, and it was worked up and down by the hand at the other end, (figure 3.)



And in North Holland they churn by means of dogs in wheels, in a similar way to the turn-spits.—[Quarterly Journal of Agriculture.]

Directions for the Use of Bone Manure. By Mr. OGDEN. [From the New-York Farmer and American Gardener's Magazine.]

MR. EDITOR: Sir,—Permit me, through the medium of your useful paper, to present to the agricultural community some hints on the use of ground bone for manure. The first and great object is to have the bone dust well fermented. The process is very simple—nothing more being necessary than to dampen it sufficiently to set it fermenting. The best method, however, is to make a compost of it with stable or yard manure, and let it ferment together. After it is fermented, it answers a very good purpose as top dressing for grass or winter grain, and may be applied early in the spring. If it is spread at the time of sowing, at the rate of 30 to 35 bushels per acre, it is harrowed in. This manure is applied with good effect to corn in the hill. Instances, however, of its too free use in this way have been known to fail; I should, therefore, recommend it to be applied broadcast. On a dry soil, especially, it is very beneficial to potatoes, particularly in a state of a fermented compost.

I would again repeat, that the great mystery in using bone is to have it fermented.

Even old bones, that have been bleaching for scores of years in the fields, when ground, will very easily ferment and make an enriching and active manure. Gardeners will find many advantages in the use of bone. It does not introduce weeds, nor insects, but is considered prejudicial to the latter. Its small bulk, lightness of carriage, and great durability, are some of its general recommendations.

Brooklyn, February, 1834.

The Use of Ground Corn and Cobs. By Mr. OGDEN. [From the N. Y. Farmer.]

MR. EDITOR,—I have been for some time using corn and cobs ground together for my cattle, and with good effect. It is an impression among farmers that there are some injurious effects arising from its use. I will state how they may be avoided. In the first place, the corn should be perfectly ripe. In the second, a large quantity should not be ground at a time. It should be kept perfectly dry, for a little moisture will cause the cob to mould. In the third, when this food is used constantly, potatoes or carrots should be given two or three times a week. With these precautions, the cob and corn ground together will be a wholesome and cheap food for cattle. I give my horses eight quarts per day, and, notwithstanding they labor hard, they gain in flesh and perform well.

I grind my corn and cobs in the bone mill, which will turn out many bushels in the course of an hour.

GOOD AND POOR FRUIT IN THE SAME ORCHARD.—The subjoined paragraph is from Dr. Thatcher's American Orchardist. It is generally supposed that the mixing of the farina will not effect the fruit, but the seed only—that this is the method of nature to obtain new varieties. It would be well, however, for those having opportunity, to make observation.

A precaution is suggested that apple trees bearing bad or ordinary fruit should not be suffered to grow with those which bear fruit of a superior quality. It is a fact with which gardeners are familiar, that the blossoms of cucumbers will greatly injure the flavor of melons that grow near them; and it is reasonable to suppose that fruits, while forming on the trees, are liable in like manner to suffer deterioration. The result of the following experiment would seem to strengthen the above conjecture. The experiment, it is said, has in numerous instances succeeded without a single failure. In an orchard containing a great variety of apple trees bearing sweet, and some very acid fruit, and others partaking of both these properties, in the vernal season, when the trees are in full blossom, the pollen (or impregnating dust) was taken from one tree (for example, where the fruit is very sweet,) and deposited on the flowers of a particular branch of another tree, whose fruit is extremely acid. The apples of that particular branch were found to combine these two properties for that season, and by this simple process, the experimenter asserts, he can easily provide himself with apples for that season perfectly to his taste, which he considers much more expeditious and equally as certain a process as that of grafting.

CLOVER AMONG CORN.—A friend of mine sowed red clover among his corn after going through with the cultivator the last time, the seed was protected from the heat of the sun by the corn, it consequently vegetated very soon, and after the corn was cut off, there was a luxuriant growth of clover, which afforded fine pasture for several successive seasons. The red clover is an excellent manure: I have raised a fine crop of wheat, by ploughing in the second growth after harvest.—[Am. Farmer.]

NEW-YORK AMERICAN.

MARCH 15—21, 1834.

LITERARY NOTICES.

THE WRITINGS OF GEORGE WASHINGTON, *being his Correspondence, Addresses, Messages, &c. &c., with a life of the author*: by JARED SPARKS; vols. II and III: Boston, Russell, Odiorne & Metcalf, and Hildard, Gray & Co.—In point of typographical embellishment and execution, these volumes are worthy of the matters and the name they are meant to illustrate. They are, in truth, admirable. Vol. I, to contain a life of Washington, is to be published while the work, which may extend to twelve volumes, is in progress. Of the two now given to the public, vol. II is occupied with letters and papers written by Washington before the American Revolution, and relate chiefly to the French war of 1756, in which he was so largely and so actively engaged. The whole of his career, from the time he joined Braddock till he retired from the army, is here recorded by himself. In an Appendix there is an elaborate and well reasoned article by the Editor, completely exonerating Washington from the only charge ever brought with any plausibility against his honor and good faith as a soldier—that of having commanded his troops, being then only 22 years of age, to fire on a French detachment commanded by Jumonville, sent to him, as the French allege, with a flag of truce; in the act of reading a peaceful summons to him to retire from lands claimed to be within the French limits, Jumonville fell. This story, founded originally upon the exaggerated report of a runaway French soldier, is most conclusively disproved; and it is shown that in firing on Jumonville's detachment, which had been lurking for some days around the camp of his own feeble band, Washington "did no more than execute the duty of a vigilant officer, for which he received the unqualified approbation of his superiors and of the public." Among the specimens, also given in the Appendix, of the early writings of Washington, there is a series of rules copied or compiled probably from various sources, entitled "Rules of civility and decent behaviour in company and conversation." We will, if we can find room to-day, annex some of these rules—if not, at some other time—as they manifestly exercised no little influence in the formation of Washington's character.

Vol. III, which commences the correspondence and papers relative to the Revolution, opens very appropriately with Washington's answer to Congress, on 16th June, 1775, accepting his appointment as commander-in-chief. The volume is devoted to letters and papers written in that capacity, to other general affairs to Congress, to provincial Congresses, and reaches to July, 1777. The political as well as personal considerations which led to the selection of General Washington, as commander-in-chief, and the noble devotion of New England, and of that thorough patriot, John Adams, one of her chief representatives, in suggesting and concurring in the choice of a Virginia general, to command armies wholly recruited at that time from the New England States, are ably exhibited in a note of the editor in the appendix.

Our only extract is the touching letter, so full of unfeigned humility—of true affection—and withal of unhesitating patriotism, in which General Washington communicated to his wife the news of his appointment to the command in chief. This is the only letter, Mr. Sparks says in a note, "from Washington to his wife, which has come into my hands. It is understood that Mrs. Washington destroyed all his other letters to her a short time before her death."

TO MRS. MARTHA WASHINGTON.

Philadelphia, 18th June, 1775.

"My Dearest—I am now set down to write to you on a subject which fills me with inexpressible concern; and this concern is greatly aggravated and in-

creased, when I reflect upon the uneasiness I know it will give you. It has been determined in Congress, that the whole army raised for the defence of the American cause shall be put under my care, and that it is necessary for me to proceed immediately to Boston, to take upon me the command of it. You may believe me, my dear Patsy, when I assure you, in the most solemn manner, that, so far from seeking this appointment, I have used every endeavor in my power to avoid it, not only from a consciousness of its being a trust too great for my capacity, and that I should enjoy more real happiness in one month with you at home, than I have the most distant prospect of finding abroad, if my stay were to be seven times seven years. But as it has been a kind of destiny that has thrown me upon this service, I shall hope my undertaking is designed to answer some good purpose.

You might, and I supposed did perceive, from the tenor of my letters, that I was apprehensive I could not avoid this appointment, as I did not pretend to intimate when I should return. That was the case. It was utterly out of my power to refuse this appointment, without exposing my character to such censures as would have reflected dishonor upon myself and given pain to my friends. This, I am sure, could not, and ought not, to be pleasing to you, and must have lessened me considerably in my own esteem. I shall rely, therefore, confidently on that Providence, which has heretofore preserved and been bountiful to me, not doubting but that I shall return safe to you in the fall. I shall feel no pain from the toil or the danger of the campaign; my unhappiness will flow from the uneasiness I know you feel from being left alone. I therefore beg that you will summon your whole fortitude, and pass your time as agreeably as possible. Nothing will give me so much sincere satisfaction as to hear this, and to hear it from your own pen. My earnest and ardent desire is, that you would pursue any plan that is most likely to produce content, and a tolerable degree of tranquility; as it must add greatly to my uneasy feelings to hear that you are dissatisfied or complaining of what I really could not avoid.

"As life is always uncertain, and common prudence dictates to every man the necessity of settling his temporal concerns, while it is in his power, and while the mind is calm and undisturbed, I have, since I came to this place, (for I had not time to do it before I left home) got Colonel Pendleton to draft a will for me, by the directions I gave him, which will I now inclose. The provisions made for you in case of my death will, I hope, be agreeable.

"I shall add nothing more, as I have several letters to write, but to desire that you will remember me to your friends, and to assure you that I am, with the most unfeigned regard, my dear Patsy, your affectionate, &c."

We can desire nothing better for our country, than that in these days of party selfishness and political corruption, the pure self sacrificing virtue which is exemplified more and more, as new light is thrown upon the motives and character of Washington, may be widely studied and imitated.

ESSAYS on the principles of Morality, and of the Private and Political Rights and Obligations of Mankind; by JONATHAN DYMOND: with a Preface by the Rev. GEO. BUSH, M. A.; 1 vol. 8vo, pp. 432; N. York, HARPER & BROTHERS.—Considering the age, the calling, and the circumstances of the writer, this book may be pronounced in every way remarkable. JONATHAN DYMOND was a member of the Society of Friends, who kept a small linen draper's shop in a country town in England. He wrote and reasoned of the high matters with which the volume before us is fraught, "in a little room adjoining his shop, subject to frequent interruptions from customers in the midst of his most profound and interesting speculations," and died in the early morning of life. When, then, it is added that he has produced a work characterized by deep reflection, severe logic, and a forcible and well ordered style; a work founded on the Bible as the first, and original, and unerring code of ethics; a work which at once enters the lists with a writer like Paley, and taking up and examining his doctrines of expediency and utility as the basis of moral obligation, triumphantly "battles the fallacies of such spurious and dangerous" propositions, we

have said enough to call general attention to this volume. There are many opinions in it indeed tinged with the peculiar color of the author's sect—there are some from which most readers may dissent; but as a work inspired by the purest views and purposes, and reposing for its foundation and sanction upon the book of Truth, it will command unqualified approval. Prof. Bush and the publishers have done good service to the cause of morals in thus bringing it before the American public. There are occasional notes by Prof. Bush, indicated by the initial B., which may serve to qualify the assent that might otherwise by unreflecting minds be given to some of the peculiar and perhaps erroneous notions of the author.

As a specimen both of the author's style and manner of viewing questions, we subjoin his chapter on the Law of Honor:

The Law of Honor.—The law of honor consists of a set of maxims, written or understood, by which persons of a certain class agree to regulate, or are expected to regulate their conduct. It is evident that the obligation of the law of honor, as such, results exclusively from the agreement, tacit or expressed, of the parties concerned. It binds them *because* they have agreed to be bound, and for no other reason.—He who does not choose to be ranked among the subjects of the law of honor is under no obligation to obey its rules. These rules are precisely upon the same footing as the laws of free-masonry, or the regulations of a reading-room. He who does not choose to subscribe to the room, or to promise conformity to masonic laws, is under no obligation to regard the rules of either.

For which reasons, it is very remarkable that at the commencement of his moral philosophy, Dr. Paley says, *the rules of life* "are, the law of honor, the law of the land, and the Scriptures." It were strange indeed, if *that* were a rule of life which every man is at liberty to disregard if he pleases; and which, in point of fact, nine persons out of ten do disregard without blame. Who would think of taxing the writer of these pages with violating a "rule of life," because he pays no attention to the law of honor? "The Scriptures" communicate the will of God; "the law of the land" is enforced by that will; but where is the sanction of the law of honor?—It is so much the more remarkable that this law should have been thus formally proposed as a rule of life, because in the same work it is described as "unauthorized." How can a set of unauthorized maxims compose a rule of life? But further: the author says that the law of honor is a "capricious rule, which abhors deceit, yet applauds the address of a successful intrigue." And further still: "it allows of fornication, adultery, drunkenness, prodigality, duelling, and of revenge in the extreme." Surely then it cannot, with any propriety of language, be called a rule of life.

Placing, then, the obligation of the law of honor, as such, upon that which appears as its proper basis,—the duty to perform our lawful engagements—it may be concluded, that when a man goes to a gaming-house or a race-course, and loses his money by betting or playing, he is morally bound to pay: not because morality adjusts the rules of the billiard-room or the turf, not because the law of the land sanctions the stake, but because the party *previously promised* to pay it. Nor would it affect this obligation to allege, that the stake was itself both illegal and immoral. So it was; but the payment is not. The payment of such a debt involves no breach of the moral law. The guilt consists, not in paying the money, but in staking it. Nevertheless, there may be prior claims upon a man's property which he ought first to pay. Such are those of lawful creditors. The practice of paying debts of honor with promptitude and of delaying the payment of other debts, argues confusion or depravity of principle. It is not honor, in any virtuous and rational sense of the word, which induces men to pay debts of honor instantly. Real honor would induce them to pay their lawful debts *first*: and indeed it may be suspected that the motive to the prompt payment of gaming debts is usually no other than the desire to preserve a fair name with the world. Integrity of principle has often so little to do with it, that the principle is sacrificed in order to pay them.

With respect to those maxims of the law of honor which require conduct that the moral law forbids, it is quite manifest that they are utterly indefensible. "If unauthorized laws of honor be allowed to create exceptions to Divine prohibitions, there is an end of all morality as founded in the will of the Deity, and the obligation of every duty may at one time or other be discharged."* These observations apply to those foolish maxims of honor which relate to duelling.—

These maxims can never justify the individual in disregarding the obligations of morality. He who acts upon them acts wickedly; unless indeed he be so little informed of the requisitions of morality that he does not upon this subject perceive the distinction between right and wrong. The man of honor therefore should pay a gambling debt, but he should not send a challenge, or accept it. The one is permitted by the moral law, the other is forbidden.

Whatever advantages may result from the law of honor, it is, as a system, both contemptible and bad. Even its advantages are of an ambiguous kind; for although it may prompt to rectitude of conduct, that conduct is not found upon rectitude of principle. The motive is not so good as the act. And as to many of its particular rules, both positive and negative, they are the proper subject of reprobation and abhorrence. We ought to reprobate and abhor a system which enjoins the ferocious practice of challenges and duels, and which allows many of the most flagitious and degrading vices that infest the world.

The practical effects of the law of honor are probably greater and worse than we are accustomed to suppose. Men learn, by the power of association, to imagine that *that* is lawful which their maxims of conduct do not condemn. A set of rules which inculcates some actions that are right, and permits others that are wrong, practically operates as a sanction to the wrong. The code which attaches disgrace to falsehood, but none to drunkenness or adultery, operates as a sanction to drunkenness and adultery. Does not experience verify these conclusions of reason? Is it not true that men and women of honor indulge, with the less hesitation, in some vices, in consequence of the tacit permission of the law of honor? What then is to be done but to reprobate the system as a whole? In this reprobation the man of sense may unite with the man of virtue; for assuredly the system is contemptible in the view of intellect, as well as hateful in the view of purity.

Mer. and Pol. Phil. b. 3, c. 9.

THE AMERICAN QUARTERLY REVIEW, No. XXIX. Philadelphia: KEY & BIDDLE.—A number this—of great vigor of writing and variety of topics. We can only allude today to two or three of the papers. That on Theodore Dwight's History of the Hartford Convention is capital. It does ample justice to a work which itself does justice to a much calumniated set of public men and acts; and which will be hereafter received as unquestionable historical evidence, however party prejudice may at this day obscure its force. The paper on *England and America*, is searching and scorching. It is, we should be tempted to believe—though without having heard a word on the subject—from the same acute pen, and investigating mind, which produced the vindication of Sebastian Cabot. Mrs. Willard's letters from France are spoken of, without favor; and we must even admit, though harshly, without injustice. It were better, certainly, that they had remained in the portfolios of those to whom they were written. From the article respecting them, we extract some observations, on the tone and composition of French society, which we commend to our readers.

But Mrs. Willard's grand objection to Parisian society, is its want of a proper regard for morality.—Though we may feel inclined to smile at one of the causes she assigns for her belief in the justness of the charge—that “once, in a room where few persons were present, she saw, by a sudden turn, a lady of whom she never heard ill, touch her lips to the neck of a gentleman, as he stooped for some object beside her,”—it cannot altogether be denied. We really think, however, that the ideas generally entertained on that head, in our country, are greatly exaggerated. There may be vice, but it does not exhibit itself; our authoress acknowledges that “nothing can be more modest than the demeanor in society of all she met,” and as long as external propriety is preserved, there can be no risk for those who are not disposed to seek occasions for sin. As to her complaint of never hearing “characters scanned in Paris as in America, as to the moral tendency of their actions,” we do not know exactly whether to be amused or angry with it. The fondness of ladies for “scanning characters” is an old joke against them, and if we change the final syllable of the first word of the quoted phrase into *dat*, we shall have the invariable result of the operation; but what business;

have people, either here or in Paris, to scan the characters of others, whose conduct, apparently, violates none of the rules of decorum? We would reverse the complaint, and lament that we do not imitate the Parisians in not meddling with the concerns of others, when we have no right or warrant for the interference. As long as no evil is inflicted upon the well-being of society by the visible conduct of our neighbors, we hold that its interests are best consulted by a universal regard to the venerable injunction, “mind your own business.” If the “moral tendency of the actions” of every one, is to be made the subject of reciprocal investigation, the millenium of dowagers is certainly at hand; but preserve us from becoming the theme of a knot of them firmly seated around a tea-table on a Sunday evening!

Whatever may have been the fact at a former period, we do not believe that, at present, a lady of respectable character would be permitted to appear at the French court; and we do not doubt that, under proper guidance, a young lady might frequent the society of Paris with as much safety, as that of any city of the globe. We say under proper guidance, for, of course, in so varied and extensive an assemblage, no matter what might be its general excellence, circumspection and caution are indispensable. The freedom which is enjoyed in this country by the youthful portion of the sex, is only compatible with the smallness and compactness of our circles, where every one is, as it were, a guard upon every one.—Whenever fashionable intercourse here swells to the dimensions it possesses in the principal cities of Europe, that freedom must inevitably be abridged, and a system adopted with regard to young ladies similar to the one which is there pursued.

Would that we could model our society in some other respects upon that of Paris! that we could imitate the ease, the courtesy, the refinement, the disposition to please and to be pleased, the spirit of mutual concession, the faculty of extracting amusement from every thing and any thing, which never allow you there to ejaculate with the poet, in a fit of despondency and *ennui*,

Business is labor, and man's weakness such,
Pleasure is labor too, and dures as much;

but which, on the contrary, render pleasure that perfect relaxation so conducive afterwards to a cheerful and adequate attention to business. The French have unquestionably carried society to as high a degree of perfection as it can well be brought. Their talent, in this respect, almost strikes a stranger with wonder. A stupid party—a phrase, alas! which is as natural in an American mouth as freedom, liberty and independence—is a thing which they could scarcely be made to comprehend. Let any number of them congregate together, and megrim takes to flight with as much precipitation as the owl from the garish light of day. Every one contributes his or her quota to the general stock of amusement; a sombre visage is a mark of rudeness and ill-breeding; and on separating, all are disposed to repeat the exclamation of Moore's enraptured lover, “how swift the hours fly.” He that is pleased himself must always others please, is an observation of Shakespeare, which is no where so abundantly confirmed as in a Parisian *réunion*. Mere amusement, however, is not all that a stranger gains by “going out” in Paris. The manner in which men of the greatest distinction in every way, in politics, in science, in literature, in art, mix in society there, furnishes him with ample opportunity of gratifying a laudable curiosity, and blending instruction with pleasure. Wherever he goes he may be always sure of encountering some one whom he must feel a desire to see, and whose acquaintance he will find no difficulty in making. Their rational politeness and affability are sufficient to embolden him to trouble them for a while with his insignificance, and thus acquire a source of agreeable recollection—in all probability of material advantage. This circumstance of the constant communion of such men with society, imparts to it, in a certain degree, an atmosphere of intellectuality which relieves and vivifies, if we may so speak, its unavoidable frivolousness, and may be said to act as an antidote to the bane of dissipation. In our country, unfortunately, men of eminence are so little addicted to frequenting the scenes of fashionable enjoyment, or when they do appear in them, it is with so slight a desire to take the prominent parts which they should perform, that society has fallen entirely into the hands of the young, and presents that aspect on which foreigners have so often remarked, of being little better than a boys' and girls' romp, where aught that is intellectual is sadly out of place. This is the reason, indeed, which the older and wiser portion sometimes assign

for keeping in the back ground; but it is their own fault if it exists. Had they not resigned their proper stations at first, they would never have had cause to complain that society is totally destitute of attraction in their eyes; and should they now resume and exert their rights, a beneficial alteration must speedily ensue. Some standard of social distinction, of a more elevated order than spruce attire and proficiency in dancing, would then be introduced; young ladies would learn to appreciate other qualifications as more attractive and distinguished, and young gentlemen would feel a nobler ambition in relation to society than they can possibly do now, when mental cultivation and superiority are “of no mark or likelihood” whatever.

There are two other points in which it would be for the advantage of our society if the Parisian practice were followed. The first is that entertainment with the good things of this life, which seems to constitute in our minds the most important appurtenance of a party of every description. Eating is a never-ending, still beginning affair, on such occasions; your guests, like a ship before the wind, must constantly be “kept full,” and as this entails considerable expense, it may furnish one explanation why those really sociable meetings, which make so delightful a source of relaxation in Paris, are of such rarity here. The necessity, as it is deemed, of providing an abundance of amusement for the palate, no matter how small the assemblage, operates to prevent the keeping of open-house, which is so conducive to familiarity and good feeling, and imparts an air of pretension and formality, productive of a chilling effect upon “the genial current” of one's spirits. In Paris, a glass of lemonade, or orange and water, together with a little cake, if that—is all the provision which is made for your physical man, at a common *séjour*, and more would only annoy you by interrupting the course of amusement; but here, you can scarcely open your mouth unless to swallow a cup of coffee, an ice, a jelly, chicken salad, pickled oysters, or some other ethereal comestible, following each other in such rapid succession, that little else can be accomplished, than to do justice to them like every body else.—Then for a visitation, after you have retired to your couch, from that agreeable companion, the nightmare, or, the next day, from the pleasant sensations which dyspepsia occasions. The other point is the answering of invitations for an evening party—unless it be a setting supper, where it is requisite to know what number is to be present, which is never done abroad, and is an inconvenience to the invited, and of no moment to the inviter. The latter may be always sure of a quorum, whilst the former, in many instances, may not be able to tell whether it will be in their power or not to appear, and acting upon this uncertainty, often send a refusal, when eventually they find that they might go. Besides, unnecessary trouble is given to servants in taking the answers, a useless consumption of their time is caused, and for one circulation generally in “the world,” writing so many notes is not the most fascinating mode of employing leisure moments.

As always happens, when we imitate others, whilst we have rejected those customs of European society which it would be beneficial for us to pursue, we have adopted one which we have no business with whatever—we allude to the habit of going at a late hour to a party. In Europe, where the whole arrangement of life is different, where, in particular, the dinner hour is six or seven o'clock, this is unavoidable, and in keeping with every thing else; but, in this country, where, at four o'clock, for the most part, the cloth is removed from the table, what can be more nonsensical than to delay to repair to a ball until ten? It is quite as dark in winter at seven as at any period of the night; and there is no reason why as much pleasure cannot be enjoyed then as afterwards. Were it fixed upon as the time for assembling, many a stupid moment, we doubt not, would be escaped by those who are waiting impatiently and idly for the hour when they may depart for the festive scene, without endangering their ton, and many a rose would continue to bloom in cheeks from which they have disappeared under the blighting influence of vigils protracted long beyond the stroke of the midnight bell.

ENGLAND AND AMERICA—a Comparison of the Political and Social State of both Nations. 1 vol.—N. York: Harper & Brothers.—This volume—of so swelling a title and of great pretensions—which has been absurdly enough ascribed to the pen of Bulwer—is conclusively shewn by an article in the last *American Quarterly Review*, to be a re-publication

of a tract originally put forth in London by a knot of private land speculators, who were desirous of entrapping the British government into a scheme of colonizing the paupers of England in Australasia, for the benefit of those who should previously have monopolized the property in the soil there. Failing in that, their attention seems to have been turned to the U. States, and the absurd hope conceived, that by representing the immense advantage to this country of a large and constant supply of laborers from Europe, in peopling our waste lands—the government might be induced to pay for importing these laborers—employing the agency of these speculators, who were to be a sort of Colonization Society; and who, by speculating in our lands and in the cost of transporting their pauper countrymen, were to find their reward.

Such is clearly established to be the character of this book; and as such, therefore, we leave it to the contempt of the reading public.

Good's Book of Nature, abridged from the original work. Boston, ALLEN & TICKNOR.—This is a happy notion, happily carried out. It is—by extracting and putting in short sentences, and in plain and intelligible language, the various amusing and instructive facts contained in Good's Book—to adapt them readily to the comprehension of children and young people. This is further aided by numerous well executed cuts—and by annexing to each paragraph or section, a question, by the answer to which, it may be at once ascertained whether the fact imparted has been understood. We can recommend this little book unhesitatingly, to parents.

It may be had of Goodrich & Wiley.

THE EVERGREEN, a collection of stories for childhood and youth, with 20 plates. By—WEST—Boston. LULLY, WAIT & Co., This, like the foregoing, is another contribution to the cause of youthful instruction—by seeking to render it attractive, as well as beneficial—and interesting the youthful learner, by stories and plates adapted to his comprehension, in those moral lessons, which, in a less winning form, might be deemed repulsive. The stories are mostly original, and the plates are well executed.

FOREIGN INTELLIGENCE.

By the *Caledonia*, from Liverpool, we have London papers to the evening of 1st February. They have nothing as late from the Continent as we had previously received via Havre, and in England all seemed to be pretty tranquil. Parliament would meet for business on the 5th February. A few extracts are annexed:

LIVERPOOL, FEB. 1.—Parliament resumes its legislative labors on Tuesday next, and perhaps less was expected when it assembled twelve months since, in all the odor of reform, than at the present moment. Then it was inexperienced, a new system was to be tried; and new men were to develop their views.—Now however, the time for action had arrived; measures of deep moment cannot be longer postponed; and the advocates and opponents of reform in detail, are alike agreed that disputed questions must be finally adjusted.

There are six questions which will especially demand the attentive consideration of Parliament, and from which it cannot from any possibility escape. They are, I. Church Reform; II. Claims of the Discontenters; III. the Corn Laws; IV. Repeal of the Assessed Taxes; V. Poor Laws for Ireland, and an alteration in the English system; and VI. Corporation Reform.

A Portuguese ship of war is still lying off Gravesend. Various rumors are afloat as to the cause of the visit, the most probable which is, that she is engaged in watching the movements of Miguel's friends in the River. Two of the harbors on the opposite coast are said to be watched in a similar manner.

Messages of Ministers.—The Speech on the opening of the Sessions of Parliament, will, it is expected, be submitted to his Majesty at a Council to be held on Friday or Saturday (to-day). The extent to which the reduction of the assessed taxes will proceed has been formerly announced. The house tax will be

wholly repealed; but the duty upon Windows, and other assessed taxes upon houses, carriages, &c. will be continued until a more favorable state of the revenue will allow of their reduction or repeal.

The Wool Trade.—There has been considerable activity in the market for long wool, which has caused prices to advance in a very remarkable manner.—A few days ago a large grower in Romney-mareh disposed of his whole growth for £23 a pack, conditionally, that he should receive any advance that might take place up to a certain period. The price is now £24, and should the present demand continue, no doubt it will increase to £25, and even £26.—[*Kentish Chronicle*.]

The subjoined advertisement from Galignani's Paris Messenger, is a specimen of a Paris fashion:

"Matrimony.—A sum of 6000 fr. will be paid to any person who may be able to arrange a union between a French gentleman, aged 42, a bachelor, and bearing the title of Marquis, with an English lady of adequate fortune. A bond for the stipulated premium, payable on the conclusion of the marriage, will be deposited in the hands of a notary. Address M. Le Baron D. H., Poste Restante, à Paris."

LATER FROM ENGLAND.—The *Samuel Robertson*, from London, brings Portsmouth papers of 8th ult.

The chief items of interest follow:

The dates from Spain are still not as late as those which have already reached us, nor is there any further news from Portugal. From Paris, the accounts are to one day subsequent to the funeral of M. Du-long, killed in a duel with General Bugeaud. This ceremony passed over without any disturbance.

The King of England opened the new session of Parliament on the 4th Feb. We give his Speech below, with a sketch of the proceedings, which followed from the London Courier. These, it will be seen, do not possess any points of greater interest here.

HOUSE OF LORDS, Tuesday, Feb. 4.

His Majesty this day opened the session of Parliament in person.

At half-past 1 the Lord Chancellor took his seat on the wool-sack.

His Majesty, attended by the usual Ministers of State, entered the House at a quarter after 2 o'clock. His Majesty, we are happy to say, looked very well. He appeared to be in excellent health.

The commons having been summoned, about 200 of them, headed by the Speaker, immediately presented themselves at the bar, when his Majesty proceeded to read, in a distinct and audible voice, the following gracious speech:

My Lords and Gentlemen—In calling you again together for the discharge of your high duties, I rely with entire confidence on your zeal and diligence, on your sincere devotion to the public interests, and your firmness in supporting on its ancient foundations, and in the just distribution of its powers, the established Constitution of the State. These qualities eminently distinguished your labors during the last session, in which more numerous and more important questions were brought under the consideration of Parliament than at any former session, of equal duration. Of the measures which have in consequence received the sanction of the Legislature, one of the most difficult and important was the bill for the abolition of slavery. The manner in which that beneficial measure has been received throughout the British Colonies, and the progress already made in carrying it into execution, by the Legislature of Jamaica, affords just grounds for anticipating the happiest results.

Many other important subjects will still call for your most attentive consideration. The reports which I will order to be laid before you from the commissioners appointed to inquire into the state of the municipal corporations; into the administration and effect of the poor laws, and into ecclesiastical revenues and patronage in England and Wales, cannot fail to afford you much useful information, by which you will be enabled to judge of the nature and extent of any existing defects and abuses, and in what manner the necessary corrections may in due season be safely and beneficially applied.

It has been the constant aim of my policy to secure to my people the uninterrupted enjoyment of the blessings of peace. In this I have been much assisted by the good understanding which has been so happily established between my government and that of France; and the assurances which I receive of the friendly disposition of the other powers of the Continent, give me confidence in the continued success of my endeavors.

I have however to regret that a final settlement between Holland and Belgium has not yet been ef-

fected, and that the civil war in Portugal still continues. You may be assured that I shall be careful and anxious to avail myself of any opportunity which may afford me the means of assisting the establishment of a state of serenity and peace in countries, the interests of which are so materially connected with those of my dominions.

Upon the death of the late King of Spain, I did not hesitate to recognize the succession of his infant daughter, and shall watch with the greatest solicitude the progress of events which may effect her government and independence, the peaceable settlement of which is of the first importance to this country, as well as the general tranquility of Europe.

The peace of Turkey, since the settlement that was made with Mahomet Ali, has not been interrupted; and will not I trust be threatened with any danger. It will be my object to prevent any change in the relations of that empire with other powers, which might endanger its future stability.

Gentlemen of the House of Commons—I have directed the Estimates for the ensuing year to be laid before you.

They have been framed with a view to the strictest economy and to such reduction as may not be injurious to the public service.

I am confident that I may rely on your enlightened patriotism, and on the cheerful acquiescence of my people for supplying the means which may be required to uphold the honor of my Crown, and the interest of my dominions.

The accounts which will be laid before you of the state of the Revenue, as compared with the Expenditure will be found most satisfactory.

My Lords and Gentlemen—I have to lament the continuance of distress amongst the proprietors and occupiers of land; though, in other respects, the state of the country, both as regards its internal tranquillity and its commerce and manufactures, affords the most encouraging prospect of progressive improvement.

The acts passed in the last session for carrying into effect various salutary and remedial measures in Ireland are now in operation, and further improvements may be expected to result from the commissions which have been issued for other important objects of inquiry.

I recommend to you the early consideration of such a final adjustment of the tithes in that part of the United Kingdom as may extinguish all just causes of complaint, without injury to the rights and property of any class of my subjects, or to any institution in Church or State.

The public tranquillity has been generally preserved, and the state of all the provinces of Ireland presents, upon the whole, a much more favorable appearance than at any period during the last year.

But I have seen with feelings of deep regret and just indignation, the continuance of attempts to excite the people of that country to demand a Repeal of the Legislative Union. This bond of our national strength and safety I have already declared my fixed and unalterable resolution, under the blessings of Divine Providence, to maintain inviolate by all the means in my power. In support of this determination, I cannot doubt the zealous and effectual co-operation of my Parliament and my people.

To the practices which have been used to produce disaffection to the State, and mutual distrust and animosity between the people of the two countries, is chiefly to be attributed the spirit of insubordination which, though for the present in a great degree controlled by the power of the law, has been but too perceptible in many instances.

To none more than to the deluded instruments of the agitation thus perniciously excited is the continuance of such a spirit productive of the most ruinous consequences; and the united and vigorous exertions of the loyal and well affected, in aid of the Government, are imperiously required to put an end to a system of excitement and violence, which, while it continues, is destructive of the peace of society, and, if successful, must inevitably prove fatal to the power and safety of the United Kingdom.

Having delivered his speech, His Majesty retired. Prayers were then read, and the house was adjourned during pleasure.

[From the London Courier.]

The address of the House of Lords last night was moved by the Duke of Sutherland in a neat and temperate speech, in which his Grace very ably paid a well merited compliment to the Earl of Mulgrave. He also dwelt with evident satisfaction on the union between France and England, rejoicing in the efforts which are now making to cultivate industry and the arts of peace among that warlike people.—Lord Howard of Effingham, in seconding the Ad-

dress, referred chiefly to Ireland, and strongly recommended moderation and good temper, while no interest should be looked to but that of the whole people.

The Duke of Wellington, the only Peer who spoke in opposition, while he professed his intention not to oppose the address, made a long, and we must say, a very unfounded attack on the Ministers, going again over all the grounds which he and the Earl of Aberdeen so repeatedly trod last session. His Grace attributed the continuance of the civil war in Portugal to the countenance of this Government. Earl Grey reminded the noble Duke that our ships were only sent to Portugal to protect our own subjects, and it had been alleged that those ships strengthened the cause of Don Miguel. The Duke said that the civil war in Spain grew out of the civil war in Portugal; assigning as the reason that Don Carlos had found refuge there instead of going to Italy. But would he not have found refuge there and support, had Don Miguel been seated on the throne? In the present temper of the Spanish nation, it is idle to suppose that the Apostolical party could have quietly retained possession of power, and whatever strengthened Carlos, like the success of Miguel, would only have made the contest more bloody and more protracted. Earl Grey, therefore, properly stated, that he could not contemplate the possibility of the Apostolical party being triumphant without a greater certainty of civil war in Spain. His Grace complained that we had not interfered against Mehmet Ali; saying, that we had only to send a fleet to the Mediterranean, and that our directions would be as readily obeyed by that Pacha as by one of our own Admirals. His Grace wished therefore to be a Dictator, not only at home, but over all the world. Is not this precisely that spirit and principle of which we now complain in Nicholas and of which we did complain in Bonaparte. Earl Grey properly said, "it was not the duty of the Government of the country to interfere in case of a war between the Sultan and his revolted vassal; that the government has remonstrated with the Viceroy, but that there had been nothing to justify us in making war on him;" and he stated that a fatal blow was given to the independence of Turkey by the Treaty of Adrianople, negotiated during the Duke of Wellington's ministry. On every point of his querulous complaints, the Duke was ably answered by Earl Grey, so as to leave nothing to be desired. With respect to the legality of the Corporation Commission, Earl Grey gave it to be understood that a similar Commission had been issued with the consent of the very person from whom the objection to the present Commission had proceeded. Earl Grey, we presume, alluded to Lord Eldon. The Noble Earl also stated, that he was desirous to put an end to the Coercion Law, but that circumstances did not permit it. The debate in the Lords had no other result than to show a disposition in the Duke of Wellington to find fault, without any adequate reason. The Address was agreed to.

In the Commons, after new writs had been moved for Leeds, Dungarvon, and Ayr, Mr. O'Connell began by announcing his intention to move for a return of all taxes repealed during five years, with a view, of course, to show that injustice has been done to Ireland. We hope a return will also accompany it of the sums expended on Ireland. The Hon. Member also gave various other notices, among them one for a bill to secure the liberty of the press.

Mr. Littleton is to bring that part of the King's Speech which relates to tithes, under the notice of the House on the 20th of February.

Bills are to be brought in to disfranchise Warwick, Stafford and Carrickfergus. The announcement by the Solicitor General of a bill to abolish imprisonment for debt was received with cheers. Various other motions were given by individual members, such as a notice to exclude Bishops from the House of Lords, by Mr. C. Rippon, and a motion to repeal the Septennial Act by Mr. Chichester; but his Majesty's Government was chary of announcements, and they all relate to important matters.

The Dissenters.—Lord Althorp stated it is the intention of Government to propose a bill for the regulation of Dissenters' marriages, and that the Government will be ready to remedy the other evils under which they labor.

The Corn Laws.—In answer to a question put by Mr. Handley, Lord Althorp stated that it was not the intention of his Majesty's Government to propose any alteration in the corn laws, and that if any person brought forward a proposition to alter them, the Government would not support it. We must add, lest misunderstanding should prevail on this point, that the Noble Lord said the Government collectively;

and we have good reason to believe that several individuals belonging to the Government will support such an alteration in those laws as will substitute a reasonable fixed duty for the present graduated scale of duties. Mr. Hume and Mr. Hunt severally gave notice of motions on this subject.

The Address in answer to the Speech was moved by Mr. S. Lefevre, who made a speech much superior to the ordinary run of speeches on such occasions, but being a country gentleman, he very naturally dwelt more on the poor laws and on the state of the agricultural interest than other things. Mr. Morrison seconded the motion, and in a speech that was still more able than that of Mr. Lefevre's, entered at great length into the state of our manufactures, which he shewed to be in a state of prosperity. We are also happy to state, on the Hon. Member's authority, that this prosperity has in general extended to the laborer. The Hon. Member also shewed that the sufferings of Ireland since the Union, of which Mr. Connell complains so much, had been shared in by this country, and that it was beyond the power of the legislature to control the empire of fashion.

Colonel Evans made some severe remarks on the subject of the assessed taxes, but the Hon. Member declined to move any amendment. He bore a very flattering testimony, derived from personal observation, to the moderation with which Don Pedro has exercised his power.

Mr. Hume moved two amendments; the first, seconded by Mr. Warburton, was to pledge the House to take into consideration the state of the Established Church as to its temporalities, on which the House divided, and Mr. Hume was supported by 39 Members; the second was to pledge the House to make reductions in the establishment, which the Hon. Member did not press to a division.

Lord Althorp, in reply to Mr. Hume, stated, that great reductions might be made without detriment to the public service, and it was the intention of the Government to propose a reduction of taxes. He announced that he is to bring in a measure on the repeal of tithes, which would be satisfactory to the House, and the country at large, and he hoped that the question would be settled this Session.

Mr. Robinson opposed the views of Mr. Morrison, and Mr. Grattan censured the part of the Speech which relates to Ireland.

Mr. O'Connell, after a more moderate speech than was expected from him, moved to leave out the three last paragraphs of the address.

Mr. Littleton made an able reply to the Hon. Member for Dublin, so as to make it unnecessary for any person connected with the Government to speak, declaring, however, that if something were not done as to tithes he should consider the case of Ireland desperate.

Sir R. Peel stated the qualifications with which he supported the Address, which related chiefly to our foreign policy. After some observations from Lord Palmerston and Mr. Baring the Address was unanimously agreed to, and the House adjourned at the reasonable hour of a quarter before midnight.

LONDON, FEB. 4.—We have received by express the Paris papers of Sunday, together with letters from Madrid of the 21st and 22d ult. The particulars of M. Dulung's funeral, which took place on Saturday, occupy a considerable space of most of the Paris papers. It appears that there were 30,000 men under arms, for the purpose of suppressing any movement which might have threatened an *emeute*.

On Monday, a smack brought into Dover, George Pile, the second mate, and three seamen, and four passengers belonging to the Seaton Castle, of Whitby, from Liverpool to New York, wrecked in the Western Ocean. They were taken off the wreck, where they had remained twenty eight days.—[Kentish Gaz.]

SUMMARY.

DEATH OF MR. NEWTON, the distinguished American Artist. The London Literary Gazette says—

"It is with regret that we have this morning received intelligence of the death of Mr. G. S. Newton, the Royal Academician, which took place on this day week, after a short but melancholy illness. Mr. Newton could not have reached his fortieth year; and, we lament to add, has left a widow and an infant child only a few months old. The grace, beauty, and feeling of his compositions are two well known to need our praise (which, indeed, they have often received in the highest terms); and we can only express our deep sorrow for his premature loss."

PLANTERS' BANK, MISSISSIPPI.—The rumor of the failure of this bank is undoubtedly erroneous. It is

known that it has, in a Philadelphia bank of responsibility, a cash balance at this moment of \$60,000.—Letters from Cincinnati, of the same date as that containing the report, are silent on the subject.

To the Editor of the New York American:

SIR: Our community is at this moment so engrossed in the great financial dispute, that the notice which, with your customary prompt attention to the fine arts, you inserted in the American, of Cole's picture, may have been overlooked, or forgotten. Every American should be proud to pay the tribute of his homage to this surpassing production of the genius of his countryman. We can imagine no surer mode of suspending (for a while at least) the carking cares of this world—of raising the mind above *deposits* and *discounts* and all mere temporary interests—than by a contemplation of the picture of the Angels appearing to the Shepherds, where the poetic painter has so powerfully illustrated the scene of the annunciation, that as you look on the beautiful scene you feel as if you were listening, with the Shepherds, to the good tidings of great joy which shall be to all people. We would earnestly recommend to mothers to avail themselves of this opportunity, to impress on their children through the medium of the eye (which, as the engravers say, cuts in) one of the most interesting scenes in the religious history of man.

Is the cross in the Star of Bethlehem an original idea of Mr. Cole? If so, he must have the credit of an exquisite conception of genius. L.

Fire at Harrisburg.—Quite a destructive fire took place at Harrisburg on Friday last. It broke out about nine o'clock, in Second street between Locust and Pine, in a frame building occupied by Mr. George Boyer as a dwelling house and tallow chandlery, and immediately communicated to the adjoining buildings, spreading destruction and panic on all sides, and before it was arrested totally consumed it together with the house owned and occupied by Mr. Lawrence Lewis, Assistant Door-keeper of the Senate; a house owned by Mrs. Baleley and occupied by Mrs. M'Elwee; a part of the house also owned and occupied by Mrs. Baleley; and a shop occupied by Mr. John Kuukle.—[Philadelphia Inquirer.]

GREAT FIRE AT SYRACUSE, MARCH, 16.—*Extract of a private Letter.*—I regret to inform you that we had an awful fire last evening in this place. It was discovered in a store of wood opposite Syracuse House, at 11 o'clock at night. It burned, with the rapidity of lightning, the entire block of stores from the main bridge in front of Syracuse House on both sides of the Canal to the next street East.

The loss exceeds \$100,000, upon which there is an insurance of near \$50,000. About 30 active, industrious Merchants, by this fire, have been cast out of their places of business, and the greater portion of their goods burned and destroyed.

An entire block was saved by the timely aid of an engine from Salina.—[Jour. of Com.]

THE BLIND.

You see those flowers, my lovely child,
Are they not beautiful and bright?
Is not your little bosom wild
With gladness at so fair a sight?
Look at your sister's rosy cheek,
And in your mother's beaming eye;
Has language any words to speak
The loveliness you there espy?
Behold that bird whose pinions float
In grace and gladness o'er the air,
The beauty of whose warbling note
Can scarcely with his plumage compare.
And mark, too, yonder beaming bow,
Reflecting all the hues of heaven;
Is there a happiness you know
Sweeter than this bright form has given?
Even night hangs out its lamps to thee,
Like diamonds round its ebony throne,
And bids you gaze in ecstasy
On worlds revealed to sight alone.
Know you, my child, that there are eyes
That never gazed upon a flower,
Ne'er saw the rainbow's lovely dyes,
Beaming upon the summer shower?
That ne'er beheld a sister dear,
Ne'er felt a mother's tender smile,
And knew no solace but to tear,
Their endless midnight to beguile?
Then go with me and hear the song
That swells to cheer these saddened ones,
The sparkling eyes of all our throng
Shall to their darkness be as Suns.

We have had for several days the the pamphlet referred to in the annexed paragraph from the Journal of Commerce, without finding time to read it. We therefore willingly avail ourselves of the article on the subject, from that paper.

NEW GRANADA AND FRANCE.—We have before us a pamphlet of 159 pages, published at Bogota, containing the official correspondence between the Government of New Granada and the Chargé d'Affaires of France, on the subject of the treatment of the French Consul (Barrot) at Carthagena, by the subaltern authorities of that place. Without attempting to decide on the very doubtful question about the privileges and immunities of Consuls, we have been struck with the spirit of forbearance and reconciliation which pervades the communications between the parties, as presenting a remarkable contrast to those of the Commander of the French squadron of Carthagena.

Whatever the errors of the authorities of Carthagena may have been, it appears evident from the aforesaid communications, that the Government of New Granada have done every thing in their power to put an honorable termination to the difficulties which have arisen from the Consul's treatment. An official note of the 9th January, from the Granadian Government to the Chargé d'Affaires of France, offers such reparations, as it seems to us, should be fully satisfactory in a case like this, in which the privileges and immunities claimed, are not explicitly agreed on, nor implicitly admitted by the respective Governments. On reading the communication, one would have anticipated the acceptance of the terms offered, and a termination of the unpleasant affair. These terms were, 1st. The punishment of any person or persons who should prove to have acted improperly towards the Consul. 2d. The removal from office of Col. Vega, Governor of Carthagena at the time: 3d. The installation of a Vice Consular office at Carthagena, hoisting the French flag on the Consular house, accompanied by salutes from the Artillery; and, 4thly. Indemnity for the losses incurred by the Consul according to a fair valuation of the property.

The Chargé d'Affaires, for reasons we do not know, did not accept these reparations, and the Granadian Government has hastened to send a diplomatic Mission to the French Court, to have the difficulties settled. The person chosen for this object is Colonel J. M. Gomez, well known in this country as Secretary for many years of the 1st Colomb. Legation sent to this country at the head of which was the Hon. J. M. Salazar, Minister Plenipotentiary. Col. Gomez was afterwards sent as Chargé d'Affaires to the Court of Rio Janeiro, and after having concluded a treaty with the Brazilian Government, returned to his country, where he has been employed in responsible and useful services under the Government, and was Treasurer in the important province of Antioquia, when the occurrences with the French Consul induced the Government to charge him with this mission to the King of the French. We hope that through the tact and abilities of Colonel Gomez, the difficulties will be settled, both parties be righted, and that harmony and good understanding re-established which are so vital to the interests of both countries.—[Jour. of Com.]

United States Ship Fairfield.—It appears from a statement in the Norfolk Beacon, that on the night of November 25th, when President Flores recaptured Guayaquil from Gen. Rocafuerte, a boat was sent on shore from the United States Ship Fairfield, then in the harbor, to ascertain the cause of the firing.

About 11 o'clock the boat returned, having been fired into by the troops of Flores; two of the boat's crew were wounded; one of them, *Henry Young*, had six balls in him, two of which were in his head; he died about half an hour after getting on board; the other man, *Wm. Gunnerson*, had two balls through his body, and his left arm broken; he was recovering. The Fairfield was at Payta 13th Dec. to sail in ten days for Callao, and thence in a few days for Valparaiso.—All well.

Caution to Whalers.—We have been favored with an extract of a letter from Captain W. Barney, Jr. of ship Barclay of this port, now in the Pacific Ocean, dated Oct. 10, 1833, containing the substance of an important communication to him from Captain Long, of the U. S. schr. Dolphin, lying at that time in the port of Callao.

Capt. L. furnishes the translation of a decree issued by the President of Lima, and Heads of Departments of the Peruvian Government, prohibiting all foreign vessels from whaling or sealing in the bays

along the coast, or on any of the islands of the Republic, without license previously obtained; under penalty of seizure and detention in any port of the Republic, without redress, or recovery of damages for being so seized and detained.

This is a regulation of serious moment to those concerned in the fisheries on that coast: and, without due precaution, may be the occasion of much dispute.—[Nantucket Inquirer.]

Fatal accident.—Four lives lost.—On Tuesday, the 4th inst., six men were engaged in navigating a flat boat, laden with stone coal, down the Youghiogheny river, in this state. On approaching the Little Falls, in Fayette county, it was discovered that the boat was not in middle of the chute, which is very rapid. Their fate seemed as inevitable as it was appalling. Consternation and dismay overwhelmed the party. One or two abandoned the boat, and made for the shore. The others remained in mute despair, and were carried over the falls with the boat, which turned sidewise in its passage, and was sunk with its contents. Four were drowned, and two got to shore with great difficulty. Their names we cannot give.—[Philadelphia Inquirer.]

[From the Troy Free Press.]

FACTS FOR FARMERS.—From a table of prices current, for the city of Troy, it will be seen what effect the experiment now making by our rulers upon the currency of the country, has had upon the produce of the farmer.

WHEAT, which last fall sold at \$1 12 to \$1 15, is now dull at 92 to 96 cents.

RYE then sold at 75 to 80 cents, now it is reduced to 50.

CORN, (yellow) which then sold at 75 cents, now sells at 50 to 56.

CORN (white) then sold at 81 cts, now at 56 to 62.

There is also, it will be seen, considerable reduction in the price of Flour, and which is dull even at reduced prices.

MEAT PORK, which then sold for \$15 per bbl. is now reduced to \$13 and \$12 50.

PRIME PORK has fallen from \$12 per bbl. to \$10 and \$9 50.

This unusual fall in the prices of the products of the farmer, is the more worthy of attention, and affords an alarming symptom of the diseased state of trade and business—since it occurs at a season of the year—the opening of the river, and of the spring trade—when always, heretofore, prices have experienced material improvement, rather than depression.

On Thursday last, (says the Georgia Enquirer of the 1st inst.) the companies of Artillery lately from Old Point Comfort, who have been stationed for some time at Fort Mitchell, took their leave, in the steamer Sangamon; and on yesterday several companies of Infantry passed through this place, from the same station, on their way to Tennessee.

[From the Edinburgh Observer.]

SIR WALTER SCOTT AND THE ROXBURGHE CLUB.

Early in 1823, in consequence of a vacancy in the Roxburghe Club, occasioned by the death of one of its members, it was proposed by Earl Spencer, the President, at the annual meeting to elect the "Unknown Author of Waverley," and the Secretary, Dr. Dibdin, was requested to address Sir Walter Scott on the subject. The two following letters were in consequence received by Dr. Dibdin, from Sir Walter Scott. The worthy and estimable Baronet met the Club but once, at their anniversary in May, 1825.

"MY DEAR SIR,—I was duly favored with your letter, which proves one point against the unknown author of Waverley; namely, that he is certainly a Scotsman, since no other nation pretends to the advantage of second sight. Be he who or where he may, he must certainly feel the very high honor which has selected him *nominis umbra*, to a situation so worthy of envy.

"As his personal appearance in the fraternity is not like to be a speedy event, one may presume he may be desirous of offering some test of his gratitude in the shape of a reprint, or such-like kickshaw, and for this purpose you had better send him the statutes of your learned body, which I will engage to send him in safety.

"It will follow as a characteristic circumstance, that the table of the Roxburghe, like that of King Arthur, will have a vacant chair, like that of Banquo at Macbeth's banquet. But if this author, who hath 'fern-seed and walketh invisible,' should not appear to claim it before I come to London (should I ever be there again) with permission of the Club, I, who have something of adventure in me, although a Knight like Sir Andrew Aguecheek, dubbed with unpacked

rapier, and on carpet consideration, would, rather than lose the chance of a dinner with the Roxburghe Club, take upon me the adventure of the *siege perilleux*, and reap some amends for perils and scandals into which the invisible champion has drawn me, by being his *locum tenens* on so distinguished an occasion.

"It will be not uninteresting to you to know, that a fraternity is about to be established here, something on the plan of the Roxburghe Club; but, having Scottish antiquities chiefly in view, it is to be called the Bannatyne Club, from the celebrated Antiquary, George Bannatyne, who compiled by far the greatest records of old Scottish poetry. The first meeting is to be held on Thursday, when the health of the Roxburghe Club will be drunk.

"I am always, my dear sir, your most faithful humble servant,

WALTER SCOTT.

Edinburgh, Feb. 25, 1823.

"My dear Sir—I am duly honored with your very interesting and flattering communication. Our Highlanders have a proverbial saying, founded on the traditional renown of Fingal's dog, "If it is not Bran," they say, "it is Bran's brother." Now this is always taken as a compliment of the first class, whether applied to an actual cur, or parabolically to a biped; and upon the same principles, it is with no small pride and gratification that the Roxburghe Club have been so very flatteringly disposed to accept me as a *locum tenens* for the unknown author whom they have made the child of their adoption. As sponsor, I will play my part as well as I can; and should the real Simon Pure make his appearance to push me from my stool, why I shall have at least the satisfaction of having enjoyed it.

"They cannot say but what I had the crown."

"Besides, I hope the devil does not owe me such a shame. Mad Tom tells us that the Prince of Darkness is a gentleman, and this mysterious personage will, I hope, partake as much of his honorable feelings as of his invisibility, and resuming his incognito, permit me to enjoy, in his stead, an honor which I value more than I do that which has been bestowed on me by the credit of having written any of his novels.

"I regret deeply I cannot soon avail myself of any new privileges; but courts, which I am under the necessity of attending, officially sit down in a few days, and, *hei mihi!* do not arise for vacation until July. But I hope to be in town next spring; and certainly I have one strong additional reason for a London journey, furnished by the pleasure of meeting the Roxburghe Club. Make my most respectful compliments to the members at their next merry meeting; and express, in the warmest manner, my sense of obligation.

"I am always, my dear sir, very much your obedient servant,

WALTER SCOTT.

Abbotsford, May 1, 1823."

[From Traits of Indian Life.]

DWELLING OF A EUROPEAN LADY.—"The mansion, with its porticoes and pillard verandas, stood in the midst of glittering lawns, the verdure of which was relief to the eye from the painful glare of the burning sunlight; the evergreen shrubberies formed a shady border to the emerald-colored carpet, and a sheltered choir for the mango-bird, the meina, and the coel. From the Portico Eva entered a circular hall, floored with polished marble and portioned off by rows of pillars, through which the eye wandered amongst a lengthened chain of halls, all similarly paved with marble, and apparently only separated from the hall itself by clusters of columns. But to Eva, just landing after the confinement of the beautiful, the delicious and sombre light which penetrated through the closed venetians, gave to the gray marble floors the cool semblance of a still surface of water, sheltered in the shady nook of some deep valley. In the secret of admitting the exact portion of external light, lies half of that beauty which our oriental residences possess. The suite of well-furnished drawing-rooms on the first floor was not less splendid, though in a different character. November, the cool season, having commenced, the whole suite of rooms had been carpeted with one rich piece of Brussels' handsomest manufacture. Ottomans and couches of light blue satin, heavy chandeliers and girandoles, musical instruments, and elegant fancy tables, filled the spacious apartments, with a profusion which perhaps the better taste of London would pronounce too redundant; yet amidst all the richness of furniture with which the fashion of later years has adorned the houses of Calcutta, few things strike the stranger's eye so forcibly as the picturesque forms and customs of the numerous native servants; and above all, the silent and graceful manner in which they seem to glide through the apartments."

TO STEAMBOAT COMPANIES.

PROFESSOR RAFINESQUE, of Philadelphia, offers his services to render steamboats incombustible, and not liable to sink, even by the bursting of boilers, or striking against snags, sawyers and rocks. This will save many boats, much property, and the lives of hundreds every year. Those who neglect this easy improvement, deserve to be neglected and deserted by the public as unmindful of safety. Apply, post paid, 81 R J M M & F

TOWNSEND & DUFFEE, of Palmyra, Manufacturers of Railroad Rope, having removed their establishment to Hudson, under the name of *Duffee, May & Co.* offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J. B. Jervis, Eng. M. & H. R. Co., Albany; or James Archibald, Engineer Hudson and Delaware Canal and Railroad Company, Carbon dale, Luzerne county, Pennsylvania.

Hudson, Columbia county, New-York, January 29, 1833.

ALBANY SEED-STORE AND HORTICULTURAL REPOSITORY.

The subscriber having resumed the charge of the above establishment, is now enabled to furnish traders and others with FRESH GARDEN SEEDS, upon very favorable terms, and of the growth of 1833, warranted of the best quality.

The greatest care and attention has been bestowed upon the growing and saving of seeds, and none will be sold at this establishment excepting those raised expressly for it, and by experienced seedsmen; and those kinds imported which cannot be raised to perfection in this country; these are from the best houses in Europe, and may be relied upon as genuine.

It is earnestly requested whenever there are any failures hereafter, they should be represented to the subscriber; not that it is possible to obviate unfavorable seasons and circumstances, but that satisfaction may be rendered and perfection approximated.

Also—French Lucern, White Dutch Clover, White Mulberry Seed, genuine Mangel Wurzel, Yellow Locust, Ruta Baga, and Field Turnip Seeds, well worth the attention of Farmers.

W. THORNBURN, 247 N. Market st. (opposite Post Office.)

Catalogues may be had at the Store; if sent for by mail, will be forwarded gratis. Orders solicited early, as the better justice can be done in the execution.

* Mr. Thornburn is also Agent for the following publications, to wit:

New York Farmer and American Gardener's Magazine. Mechanics' Magazine and Register of Inventions & Improvements.

American Railroad Journal and Advocate of Internal Improvements; and the

New-York American, Daily, Tri-Weekly, and Semi-Weekly; either or all of which may be seen and obtained by those who wish them, by calling at 347 North Market street, Albany.

SURVEYORS' INSTRUMENTS.

Compasses of various sizes and of superior quality, warranted.

Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by E. & O. W. BLUNT, 154 Water street, corner of Maiden-lane.

ENGINEERING AND SURVEYING INSTRUMENTS.

The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely new: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy—also, a Railroad Goniometer, with two Telescopes—and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.

WM. J. YOUNG, Mathematical Instrument Maker, No. 9 Dock street, Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.

Baltimore, 1832.

In reply to thy inquiries respecting the instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad. I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable.

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sights, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to lateral angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend, JAMES P. STABLER, Superintendent of Construction of Baltimore and Ohio Railroad.

Philadelphia, February, 1833.

Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors.

E. H. GILL, Civil Engineer.

Germantown, February, 1833.

For a year past I have used Instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these Instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY B. CAMPBELL, Eng. Philad., German and Norrist. Railroad

ml 1y

STEPHENSON,

Builder of a superior style of Passenger Cars for Railroads No. 264 Elizabeth street, near Bleecker street, New-York.

RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part of the New-York and Harlem Railroad, now in operation.

RAILROAD CAR WHEELS, BOXES AND OTHER RAILROAD CASTINGS.

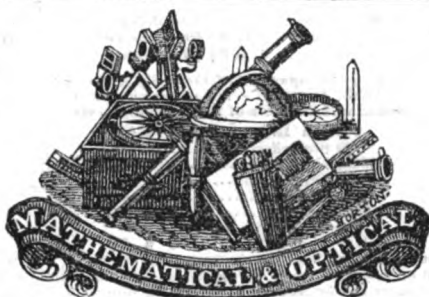
Also, AXLES furnished and fitted to wheels complete at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to. Also, CAR SPRINGS.

Also, Flange Tires turned complete. J. ROGERS, KETCHUM & GROSVENOR.

NOVELTY WORKS,

Near Dry Dock, New-York.

THOMAS B. STILLMAN, Manufacturer of Steam Engines, Boilers, Railroad and Mill Work, Lathes, Presses, and other Machinery. Also, Dr. No. 1 Patent Tubular Boilers, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited.



INSTRUMENTS.

SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

EWING & HEARTLE, at the sign of the Quadrant, No. 58 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude.

For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewing & Heartle.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable.

They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES P. STABLER, Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' Instruments of your Manufacture, particularly Spirit levels, and surveyors' Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These Instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

WILLIAM HOWARD, U. S. Civil Engineer.

Baltimore, May 1st, 1833.

To Messrs Ewing and Heartle.—As you have asked me to give my opinion of the merits of those instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming acquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprise so well merits, I remain, yours, &c.

E. H. LATROBE, Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them upon application, to any person desirous of perusing the same.

AN INTERESTING AND USEFUL MAP.

A friend of ours has now in a state of forwardness, a Map upon which will be delineated nearly all the Railroads now chartered in the U. States. It is designed to show the present contemplated connexion of the different lines, as well as where others may hereafter be constructed to connect with them. It will be completed in a few weeks, and may be had either in sheets, or put up in morocco for pocket maps, in any quantity, by applying to the subscriber.

D. K. MINOR, 35 Wall street.

New-York, August 14, 1833.

NOTICE TO MANUFACTURERS.

SIMON FAIRMAN, of the village of Lansingburgh, in the county of Rensselaer, and state of New-York, has invented and put in operation a Machine for making Wrought Nails with square points. This machine will make about sixty sd nails, and about forty 10d nails in a minute, and in the same proportion larger sizes, even to spikes for shive. The nail is hammered and comes from the machine completely heated to redness, that its capacity for being clenched is good and sure. One horse power is sufficient to drive one machine, and may easily be applied where such power for driving machinery is in operation. Said Fairman will make, vend and warrant machines as above, to any persons who may apply for them as soon as they may be made, and on the most reasonable terms. He also desires to sell one half of his patent right for the use of said machines throughout the United States. Any person desiring further information, or to purchase, will please to call at the machine shop of Mr. John Humphrey, in the village of Lansingburgh.—August 16, 1833.

TO RAILROAD COMPANIES.

PROFESSOR RAFINESQUE, of Philadelphia, will undertake to build CARS that will carry along their own railway, and may be used on level or hilly roads. They will save ten millions of money to be wasted on 1000 miles of iron railroads to be laid in the United States within a few years, and dispense with tracks and double tracks. These Cars may be drawn by horses or steam. He claims to have discovered them ever since 1825, by his patents filed in the Patent Office. Apply, post paid.

INCOMBUSTIBLE ARCHITECTURE.

INCOMBUSTIBLE dwelling-houses and buildings of all kinds devised or built in New York, or any part of the United States, as cheap as any other combustible buildings. Actual buildings and houses rendered incombustible at a small additional expense.

SHIPS of all sorts, and Steamboats, rendered incombustible, and not liable to sink, at a small expense.

For sale, 10,000 lbs. of ANTIGNIS, or Incombustible Varnish, at one dollar per lb.

Apply to C. S. RAFINESQUE, Professor of Hist. and Nat. Sciences, Chemist, Architect, &c. in Philadelphia, No. 49 North 8th street. A pamphlet given gratis.

References in New-York.—Mr. Minor, Editor of the Mechanics' Magazine; Messrs. Rushton & Aspinwall, Druggists Editors in the city or country, copying this advertisement, will receive a commission on any contract procured by their means.

RAILWAY IRON.

	Ninety-five tons of 1 inch by 1 inch,	Flat Bars in length of 14 to 16 feet counter sunk holes, end cut at an angle of 45 degrees with applying plates; nails to suit.
200	do. 1 1/2 do. do.	
40	do. 1 1/2 do. do.	
800	do. 3 do. do.	
800	do. 3 1/2 do. do.	
	soon expected.	

250 do. of Edge Rails of 36 lbs. per yard, with the requisite chairs, keys and pins.

Wrought Iron Rims of 30, 33, and 36 inches diameter for Wheels of Railway Cars, and of 60 inches diameter for Locomotive wheels.

Axles of 2 1/2, 3, 3 1/2, 4, 4 1/2, and 5 inches diameter for Railway Cars and Locomotives of patent iron.

The above will be sold free of duty, to State Governments and incorporated Governments, and the Drawback taken in part payment.

A. & G. RALSTON, 9 South Front street, Philadelphia. Models and samples of all the different kinds of Rails, Chairs, Pins, Wedges, Spikes, and Splicing Plates, in use, both in this country and Great Britain, will be exhibited to those disposed to examine them.

LOCOMOTIVE ENGINES.

THE AMERICAN STEAM CARRIAGE COMPANY, OF PHILADELPHIA, respectfully inform the public, and especially Railroads and Transportation Companies, that they have become sole proprietors of certain improvements in the construction of Locomotive Engines, and other railway carriages, secured to Col. Stephen H. Long, of the United States Engineers, by letters patent from the United States, and that they are prepared to execute any orders for the construction of Locomotive Engines, Tenders, &c. with which they may be favored, and pledge themselves to a punctual compliance with any engagements they may make in reference to this line of business.

They have already in their possession the requisite apparatus for the construction of three classes of engines, viz. engines weighing four, five, and six tons.

The engines made by them will be warranted to travel at the following rates of speed, viz. a six ton engine at a speed of 15 miles per hour; a five ton engine at a speed of 18 miles per hour; a four ton engine at a speed of 22 1/2 miles per hour. Their performance in other respects will be warranted to equal that of the best English engines of the same class, with respect not only to their efficiency in the conveyance of burthens, but to their durability, and the cheapness and facility of their repairs.

The engines will be adapted to the use of anthracite coal, pine wood, coke, or any other fuel hitherto used in locomotive engines.

The terms shall be quite as favorable, and even more moderate, than those on which engines of the same class can be procured from abroad.

All orders for engines, &c. and other communications in reference to the subject, will be addressed to the subscriber, in the city of Philadelphia, and shall receive prompt attention.

By order of the Company, WILLIAM NORRIS, Secretary.

December 24, 1833. For further information on this subject see No. 46, page 772 of this Journal.

[From the Evening Post.]

We have looked over the Fifteenth Annual Report, made to the Legislature of this State by the Directors of the Institution in this city for the Instruction of the Deaf and Dumb. From this document we learn that the whole number of pupils in the institution at present is 134, having increased from 87 since the last report. During the present year 11 have been dismissed and 58 admitted. The greater part of the pupils, as we learn from the report of the Superintendent of Common Schools, contained in the appendix, are educated at the expense of the State. Ninety-seven, the whole number which the law authorizes, are provided for in this manner. Of the remainder, 11 are supported by the supervisors of the city of New-York, 5 by the Legislature of New-Jersey, 3 by the New-York Female Association; 15 are pay pupils, and 3 are educated at the cost of the Institution. The cessation of lotteries in the State has cut off one of the sources of income enjoyed by this institution, amounting to several thousand dollars. This diminution of its means will, it is said, prove a serious check to its usefulness; an application is therefore to be made to the Legislature for a grant to make up the deficiency. Very considerable improvements have recently been introduced into the methods of instruction. Two additional professors have been added to the five by whom the task of education has been hitherto performed. A class is about to be formed for the purpose of receiving lessons in articulation, after the method by which the deaf and dumb have been taught to speak in some of the European institutions. Among the improvements which have been introduced into the course of instruction, is the method of teaching the construction of language by the means of symbols. Each character denotes a particular part of speech, and by a series of modifications is also made to represent inflections of language, comprehending nouns and pronouns in their several cases, adjectives in their various degrees of comparison, and verbs in their various forms. Their use is to show the artificial arrangement of words in language, after a knowledge of the meaning of single words has been acquired. It is said that this method is exceedingly ingenious, and has been attended with great success. The following are mentioned as some of the most important changes and improvements effected in the institution since the last year.

1. A small library adapted to juvenile reading, and a philosophical apparatus to illustrate truths in physics and astronomy, have been procured.
2. The number of pupils has been increased by nearly one-third, and two additional professors have been employed.
3. A full supply of large slates, of the same quality as those heretofore in use, has been imported from Wales.
4. An excellent set of models for drawing has been received from Paris, and instruction is given to a class weekly in this useful art.
5. The debt incurred for the erection of the building has been extinguished.
6. The lawn in front of the edifice has been improved by planting trees and laying out walks for the purpose of providing a promenade and play ground for the pupils.

Courses of lectures are also now given in six departments of knowledge under the direction of a professor.

"The lectures are given three evenings in a week, during hours which are allotted neither to study nor mechanical operation, and they are so arranged in point of time and duration as neither to be too burdensome to the professors, nor to be regarded by the pupils in the light of a task. The departments of instruction embrace the following subjects:

1. Those branches of science which treat of nature, and of which the object is to discover the properties and relations of all bodies.
2. Description of the mineral, vegetable and animal kingdom.
3. Rise, progress, and present condition of the arts, commerce and agriculture.
4. Geography, physical and political.
5. History, ancient and modern, sacred and profane.
6. The science of government.

Each lecture is reduced to writing in order that the subject matter may be referred to and studied by the pupils at their future convenience. These intellectual exercises are not embraced within the limits of a common education; and besides exciting new interest in the pupils by varying the monotony of their ordinary pursuits with a mixture of more attractive subjects, they cannot fail to be in the highest degree

instructive, by opening to their investigation sources of knowledge hitherto unexplored, and of the value of which they can have formed no estimate. Too much praise cannot be accorded to the principal and professors, in whose zeal and devotion this essential improvement, involving great labor on their part, had its origin."

Advices from Vera Cruz to Feb. 18th, state that a *conducta* of \$1,290,000 had just arrived there from Mexico. Gen. Barragan, Minister of War, and Garay, Minister of Finance, had both resigned.—[Jour. Com.]

AMERICAN FUNDS.—LONDON, February 4th.

Redeemable:	
United States.....	5 per cent.....1835.
New York.....	6.....1837.
do. do.....	1838, 40, 41.
Virginia.....	5.....1858.....105½
do. do.....	1845, 51.
Ohio.....	6.....1850.
Louisiana.....	5.....1834, 39, 44, 49..96
Mississippi.....	6.....1841, 5, 51, 6
Alabama.....	5.....1863.
Indiana.....	6.....1852.
Illinois.....	6.....1850.

BULLION.

Per oz.	Per oz.
Portugal Gold in coin	0 0 0 New dols with pillars 0 4 11½
Foreign Gold in bars	3 17 9 New dols without do. 0 4 10½
New Doubloons	0 0 0 Silver in bars 8 d. 0 4 11½

[From a Correspondent of the Daily Advertiser]

LIVERPOOL, January 7.—The transactions in Cotton this week amount to 15,308 bales of all descriptions, viz:

223 Sea Islands at.....	14 a 21½
30 Stained.....	7 a 12½
6636 Uplands.....	7½ a 8½—(20 a 6)
3940 Orleans.....	7½ a 9½
1006 Alabama.....	7 a 8½
2728 Brazil.....	8 a 11½
110 West India.....	6½ a 7
1130 East India.....	5 a 7½

The market has been heavy throughout the week, and we find it necessary to reduce our quotations for all descriptions of per lb. especially for New Uplands which continues to be pressed upon the market, even at the decline, owing to the scarcity of Egyptian, Sea Islands bring forward full prices, and have rather an upward tendency; 500 of the American were in speculation, and 300 together with 400 Surats, and 300 Brazils for export, and the import of the week is 19,180 bales.

Asbes in very limited demand, and the sales trifling. Nothing done in Naval Stores. Rice, 340 tierces of old, were sold at 11s a 15s 6d per cwt. Flaxseed, 55s per hhd. has been taken for 200 hhd. and 62s per cwt for 20 tierces of new Cloverseed. No change of interest in the Grain market, but sweet Flour in bond is wanted, but holders will not accept the prices offered. Tobacco remains without any alteration of no moment.

LIVERPOOL MARKETS, Feb. 3.—COTTON.—The sales today are estimated at 9000 bags, of which 500 American and Brazil have been taken for export. Prices remain as on Saturday.

Feb. 4.—The market has been extremely dull today. The sales are estimated at from 800 to 1000 bags, and prices are with difficulty maintained.

LONDON MARKET, Feb. 4.—COTTON.—There was a general decline on all kinds last week of 2s per cwt. The reduction has induced holders to withdraw their sales for the present, and though the market appeared heavy yet no parcels are pressed into it.

SUGAR.—The new sugar market continued very steady, sales nearly 3000 hhd. and tierces, being extensive for the season; bright colour descriptions commanded a further advance of 8d. to 1s per cwt.; low qualities heavy, and former prices scarcely could be obtained. This morning the general demand for Muscovades continued unabated. The refined market improving, and prices rather higher. The improvement in Bengals this forenoon is maintained, but there are few sales.

TALLOW has declined 6d. in the cwt.

Agricultural Report for January.—The accounts from all lowland parts of the country, in consequence of the deluge of rain, are most melancholy; the immediate losses sustained are great, and the effects which may too probably be expected of embarrassing the spring culture, must be highly injurious to the farms.

LONDON, Feb. 6.—Consols 88½; do for Accounts, 88½; French 5 per cent. 106½.

LIVERPOOL CORN EXCHANGE—FRIDAY.—Notwithstanding we have rather a limited arrival of grain and flour fresh up since Tuesday, the trade has ruled for all articles extremely dull to-day, and there does not appear to be much confidence on the part of buyers at the same time. The late large supply is not forced upon the market, and we can therefore hardly quote any reduction in prices, though the dullness so generally existing would most likely induce holders in partial instances to give way a little below the currency of Tuesday last.

CINCINNATI, March 12.—FLOUR.—From boats, at \$2.76 a 2.87. From store, \$3 less lid demanded.

WHEAT.—This article has risen a shade since our last. It now sells briskly at 18½. But little in market.

PORK BACON & LARD.—There has been no change in these articles since our last.

Pork, Mess.....	10 00 a 10 25
—Prime.....	8 00 a 8 25
—Corgo.....	5 00

CHARLESTON, March 13.—The Market.—[Semi-weekly Report.]—COTTON.—The weather, on Monday and Tuesday, was so unfavorable that little business was transacted. Yesterday, however, it became clear and pleasant, and sales to a considerable extent were effected, at the closing prices of last week. We make no alteration in quotations.

RICE.—This article continued very dull. No sales have been effected over 2½. Holders seem unwilling to submit to a further reduction—and we understand some shipments have been made on owner's account.

Those papers with which the *American* exchanges, and in which the following advertisements are inserted, will confer a favor on the subscriber by giving the following a few insertions:

Subscribers who are indebted for the *New York American*, the *Railroad Journal*, *Mechanics' Magazine*, or *New York Farmer*, are respectfully requested to remit the amount by merchants, or other gentlemen visiting the city this spring, and, if possible, in notes of the United States Bank, or its Branches, as the expense of postage and the discount on notes of distant Banks, is a great tax upon the Office.

VOL. III. OF THE RAILROAD JOURNAL AND ADVOCATE OF INTERNAL IMPROVEMENTS is published once a week in quarto form, with 16 pages to each number, at \$3; or in semi-monthly form, of 32 pages, stitched in a cover of colored paper, at \$4 per annum, in advance. The first and second volumes of the Journal may be had in two parts to the year, either stitched in covers or bound in boards, at the subscription price, with price of binding, in one part, 50 cents, in two parts \$1 per volume. Those in covers may be sent by mail to any part of the country, the same as a magazine. Published at No. 35 Wall st., New-York, by D. K. MINOR, Editor and Proprietor.

THE MECHANICS' MAGAZINE AND REGISTER OF INVENTIONS AND IMPROVEMENTS is now just commencing its second year. It will be continued in a manner altogether superior to that of the first year. It has drawn forth many valuable correspondents, in different parts of the country, with the assistance of whom, and those who may hereafter contribute to its columns, together with the ability of Mr. JOHN KNIGHT, formerly, and for several years, proprietor and publisher of the *LONDON MECHANICS' MAGAZINE*, who is engaged as Editor, the proprietor has no hesitation in saying that it will be found worthy of an extended circulation and a liberal support. The first year, or two first volumes, having been stereotyped, may now be had either in numbers, or bound in boards—either at wholesale or retail. Price \$1 50 per vol. in numbers, or \$1 75 in boards, or \$3 per annum. A liberal discount made to the trade. Published by the proprietor, D. K. MINOR, at No. 35 Wall st. N. Y.

THE NEW-YORK FARMER AND AMERICAN GARDENER'S MAGAZINE, has commenced the second volume of a new series. It is published once a month, in quarto form of 32 pages to each monthly number, at \$3 per annum in advance. The last volume may be had either stitched in a cover, so as to be sent by mail, or in boards. Price, stitched, \$3 25; in boards, \$3 50. Each subscriber who pays in advance, or previous to the first of April, free of postage or commission, will be entitled to eight additional pages to each monthly number, or 96 extra pages to the volume. Published at No. 35 Wall street, N. Y. D. K. MINOR, Proprietor.

A QUARTERLY JOURNAL OF AGRICULTURE AND MECHANICS will hereafter be published at the same office. Each quarterly number will contain about 300 large octavo pages, embracing the most choice articles from the best agricultural and mechanical publications both in America and Europe. It will form 2 volumes to the year, of about 640 pages each, and will be put up like other quarterly publications, so as to be sent by mail. Price, \$5 per annum, in advance.

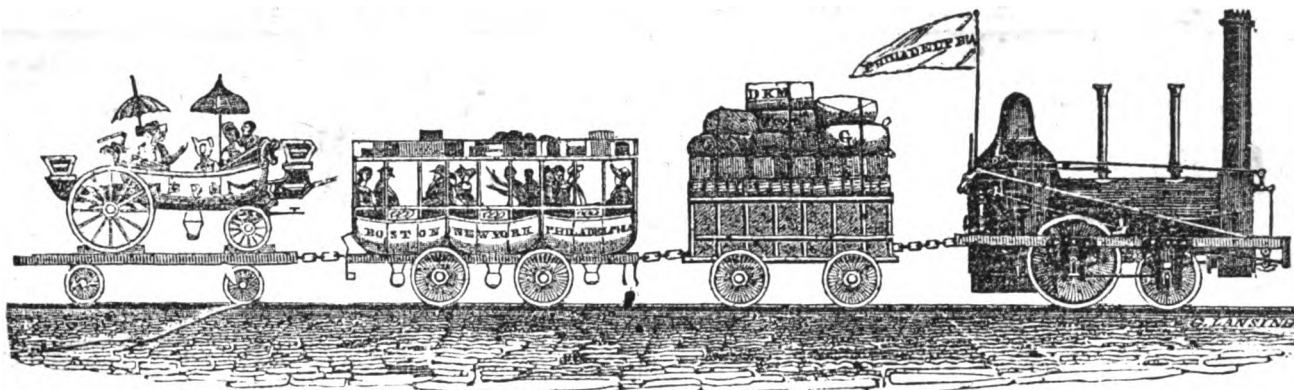
N. B. A small edition only will be published.

D. K. Minor also publishes the *NEW-YORK AMERICAN*, daily, tri-weekly, and semi-weekly.

All Letters and Communications for the above publications, may be addressed, free of postage, to D. K. MINOR.

List of Subscribers to the *Railroad Journal* who have paid in advance to Jan. 1, 1835, —continued from March 8, 1834.

Roberts & Carmickle, Saxtonville, N. J.
Horatio Allen, Charleston, S. C.
J. R. Bartlett, Providence, R. I.
H. Bradford, Madison, Madison co., N. Y.
H. Kochler, Tamaqua, Pa.
T. B. Moore, Tamaqua, Pa.
Lexington and Ohio Railroad Company, Lexington, Ky.
C. F. Garnett, Petersburg, Va.
P. T. Jackson, Boston, Mass.
Kirk Boott, Lowell, Mass.
Thomas Hutton, Louisville, Indiana.
P. Petton, Monticello, Sull. co., N. Y.
J. B. Potter, Amsterdam, N. Y.
Ira Davenport, Hornesville, Steuben co., N. Y.
Thomas Meredith, Carbondale, Pa.
J. C. Elston, Crawfordsville, Indiana.
Samuel Appleton, Boston, Mass.
E. F. Johnson, Utica, N. Y.
W. Morris, Muncy, Pa.
T. B. Jervis, Rochester, N. Y.
H. Langtry, Columbin, Ten.
Benj. E. Pierson, Memphis, Ten.



AMERICAN RAILROAD JOURNAL, AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT No. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, Editor.]

SATURDAY, MARCH 29, 1834.

[VOLUME III.—No. 12.]

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, MARCH 29, 1834.

The writer of the following will please accept our thanks for his very acceptable letter. Such favors come, at this time, most opportunely to hand.

The Athens Railroad, to which he refers, cannot fail to attract the attention of business men in this community, although it may not just now meet with such a reception as its importance demands. It is certainly a *second* link in a grand southern chain of internal improvements, from which the South will derive great advantages. It will enable the business man, or the man of pleasure, to perform the journey from New-York to Athens, with ease, in five, and probably in four days.

ATHENS, Ga., March 12, 1834.

DEAR SIR,—I have been very much at a loss how to remit the subscription for the Railroad Journal. I have at last, however, procured notes that will probably answer your purpose,* and enclose my own subscription for the past and present year.

I enclose, also, three dollars, for which you will send the Journal to Mr. Wm. Dearing, of this place; also, to Wm. Lumpkin, and Wm. Williams.

I feel very much obliged to you for the favorable notices in the Journal on the subject of our Athens Railroad. The project is in a pretty fair way to be accomplished, if the proper energy is used. The route is, I think, one of the best in the United States, being formed in a good degree by nature. The distance from Augusta to Athens is about 96 miles by the present road: the railroad survey gives 105 miles only; and not a drop of water is crossed, but one or two very inconsiderable brooks. No inclined plane is necessary, except to ascend the hill on which Athens stands. The esti-

mate is that the whole road, engines, cars, and all, will cost under *ten thousand dollars* the mile. We design using horse power, for the present, which it is believed will reduce the cost to five or six thousand per mile. The very best timber is at hand, and the soil is very favorable, being chiefly, except near Augusta, a stiff clay foundation.

Our purpose is to make this road a part of the great road beginning at Memphis and ending at Charleston; and if the road is ever finished through the whole distance, the profits, with good management, must be incalculable. It will command a large portion of western travel; and the transportation of an immense amount of produce.

Even if the road should stop at Athens, we calculate on a large amount of business from East and Middle Tennessee, North Alabama, and the counties in this state above us. We have near this place inexhaustible deposits of iron ore, limestone, and marble, which will furnish articles of export, in addition to what is now supplied by the cotton planters.

It seems to me that this road must be an object of interest to the people of the city of New-York. The trade of great part of East and Middle Tennessee goes to Baltimore and Philadelphia; but when this road is built, by means of the Charleston road, and steam packets, it will certainly find its way to New-York. Those interested in the prosperity of that city, therefore, would certainly employ their capital to good advantage, independent of the income of the stock, by vesting it in this undertaking. Whether an opportunity of making such investment will be offered, I cannot say. I hope the stock will be all taken at home.

By reference to a map of Georgia, you will at once see the indications of a favorable route for an improvement of this sort. Begin at Augusta; keep the ridge between Little River and the Ogeechee to near Warrenton; thence on the same ridge to Crawfordville, and so proceeding near Greensborough and Lexington, you will see that until we arrive at the river at Athens, not a single bridge will have to be built; and the Engineer reports the excavation and embankment to be very little, compared with what has been done on other routes.

Very respectfully, &c.

P. S.—The officers of our Railroad are :

President—James Camak.

Directors—Wm. Dearing, Wm. Williams, A. B. Linton, Rev. James Shannon, J. A. Cobb, E. L. Newton, John Nisbet, Wm. Lumpkin, W. R. Cunningham, of Athens; John Cunningham, of Greene; R. B. Thompson, A. Jones, of Talliaferro.

Secretary and Treasurer—Wm. Williams.

The Undulating Railway—Resistance from Friction—Resistance of the Atmosphere—Mr. Badnall in reply to S. Y., Junius Redivivus, and Mr. Cheverton. [From the London Mechanics' Magazine.]

SIR,—Seven months have now elapsed since the undulating railway was first introduced, as a subject of discussion, in your Magazine. During that period I have done my utmost, by fair and conscientious argument, to support the cause which I undertook to defend; and the gratification which I now feel in having witnessed your honorable and candid confession of a changed opinion, and in finding myself supported by several of your most able correspondents, far more than compensates for the disappointment which the opposition of "S. Y." would naturally excite, even should it be continued after the publication of this letter, and after the important facts determined by the experiments. I say *disappointment*, because, if still unconvinced, he will, I fear, ever remain unconvinced; and, judging from the occasional piquancy and asperity of his remarks, he is not likely to be more fairly defeated, without losing, in some measure, that evenness of temper which I should be sorry to disturb. If I do him injustice, I apologise for it; but I feel that the time is now arrived when (practical experiments having decided the merits of the question) I have no longer occasion to defend myself by parrying the verbal attacks of my opponents. On the contrary, I waive all further hypothetical discussion on this subject, unless such discussion refer to the result of my late or future experiments. In coming to this conclusion I am not considering my own convenience, but I think your readers in general will agree with me, and with your friend, *Professor Crackwell*, that unless we draw in our horns, the undulating controversy will not only become sickening, but, judging from Mr. Cheverton's last letter, somewhat disgusting. "*Nec lusisse pudet, sed non incidere ludum*," said Horace, and I quite agree with him.

You, Mr. Editor, or an impartial jury of your readers, must judge whether I am led to this train of thinking through *fear* of my opponents, or whether I am not justified in claiming the victory I have contended for. Those gentlemen who have advocated my side of the question—*Saxula*, Mr. Ham, Mr. Sanderson, Kinclaven, Mentor, and Mr. Trebor Valentine, have each and all supported my position by convincing diagrams, appropriate comparisons, or disproved experiments; whereas neither "S. Y." nor Mr. Cheverton have thought proper to substantiate their reasoning by a single particle of corroborative evidence. That both are clever men, I do not for one moment question; but a clever man occasionally errs; and never

* U. S. Branch notes, which are as good to us as gold.—[Ed.]

is he more likely to do so than when inflated with that unhappy quantity of combustible matter,—vulgar abuse, self-sufficiency, and extreme vanity,—which have been so conspicuously displayed in the disjointed lectures which Mr. Cheverton has directed to me on this subject. For those lectures I am indebted to him, especially for the last, which I shall presently take into consideration, and which, I trust, will be headed in your title-page, "THE PROFOUND IGNORANCE OF MR. BADNALL DEMONSTRATED BY THE SUPREME SENSE OF MR. CHEVERTON"!!

My present object is to reply to all unanswered objections which have been raised by my opponents up to this time. In doing this, I may probably introduce some opinions which may appear open to further discussion; but as I fully concur in the sentiments expressed by *p.* (No. 532), as to the frequently injurious effects of a too protracted controversy, I shall feel it an act of duty to your readers to be a silent observer of any attacks upon them. I place them on record as my deliberate and conclusive opinions; and having done so, I turn from *theory* to *practice*, and now present myself to your readers as the defender of the undulating principle in a far more important point of view—I mean in defence of its *complete practicability*.

In thus a second time throwing the glove, allow me to prognosticate what will be the result of another year's experience. Within that period, engineers and mathematicians will have an opportunity of making up their minds upon the subject, and from the expiration of that time *we shall never have another level railway* (whereon locomotive steam force is intended to be employed) *laid down in Great Britain*. The Liverpool and Manchester railway, though it will ever maintain the character of being one of the most important examples of British spirit, British perseverance, and British ingenuity, will, in the eye of posterity, have one dark spot upon its fame—it will be compared to the massive and expensive aqueducts of the ancients. Our forefathers knew not that water would find its own level—and, while we praise their structures, we cannot help wondering and smiling at their ignorance. Thus, however, will posterity smile at us, exclaiming, "*Could you have believed it! They expended, in about thirty-one miles, hundreds of thousands of pounds to make a railroad level, through their disbelief that all bodies descending on a curvilinear arc will rise again to their own level, minus friction!*"

I now turn to "S. Y."—a few words afterwards to Junius Redivivus; and then, in perfect good humor, to Mr. Champion Cheverton.

A desire to remove, if possible, every opposition founded on mathematical reasoning, which has been urged against the undulating theory, induces me to return to "S. Y.'s" first communication. Before doing so, however, I must at once contend against the liberty which he takes in stating that I have betrayed ungentlemanlike conduct by my observation, "that I should have felt hurt that any other correspondent than himself had doubted my proficiency in common arithmetic." The "indignation" of "S. Y." cannot possibly justify such an observation.

In "S. Y.'s" letter, page 181, there is an error in print, afterwards corrected, which rendered his first formula "incomprehensible." I allude to the omission of the decimal dot before the figure 8. In the succeeding column, however, I find this misprint did not occur; I therefore ought to have understood his object better than I did. But allowing that I had fully comprehended it, and that such misprint had not occurred, I observed that the whole formula was founded on false data, and that the position which he took was altogether untenable. I refer now to the saving of friction "*abstractedly*," without allusion to the difference in velocity occasioned by the action of gravity, to which latter point he also frequently alluded,

when he denied that the speed could be greater on a curve than on a level line. With regard, then, to the real difference of friction on the two roads, he gives the following proposition, which I have thought it better to describe by diagram:

Fig. 1.

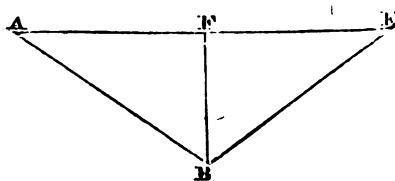
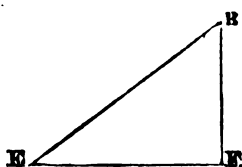


Fig. 2.



"If A E (fig. 1) be equal to 16, and the depth F B equal to 6, the length of each inclined plane will be equal to 10, and the pressure against the plane; and therefore the friction, according to Mr. Badnall, will be equal to .8 of the friction on the level."

Now "S. Y." must have misunderstood my diagram, "p. 93, to which he refers, and which was, I think, clearly elucidated. If he *did* understand it, from whom did he draw his conclusion, that I imagined the friction or pressure on the inclined plane E B, whose perpendicular elevation is equal to F B, equal to .8 of the friction on the level?

Let him suppose, then, (reversing the above diagram, as fig. 2,) the plane E B raised upon the base E F, at an elevation of F B. It cannot be doubted (as proved by the parallelograms described in my diagram, page 93,) that if the base line E F represent the pressure (or friction) of the whole weight resting on the plane E B, F B will represent the force of gravity down the plane, or, in other words, as the length of the line F B is to the length of the line E F, so is the pressure or friction taken off the inclined plane E B to the pressure or friction left on the inclined plane; or, to be more explicit, if a body be supposed to weigh 10 tons, and to be placed on the horizontal line E F, no one can dispute that, the line of pressure being vertical, the *whole weight of the mass* must necessarily press upon the rail. If, then, E F were exactly equal to F B, and the weight were removed to the inclined plane E B, the pressure would be reduced *one half*; and thus, in the above diagram, E F being equal to 8, and F B equal to 6, and supposing any weight resting on E B to be divided into 14 parts, $\frac{8}{14}$ of the whole weight would be resting on the rail, and $\frac{6}{14}$ would be taken off the rail.

By this explanation it will be evident that "S. Y.'s" second formula, page 242, is, like to his first, established on wrong data, for he *never takes into consideration the perpendicular elevation of the plane*; and it is this which has evidently misled him, or otherwise he would not consider his argument to hold good for "all lengths and elevations of inclined planes."

"S. Y." considers in both formulæ the pressure to be determined by the *base*, divided by the *length of the inclined plane*: he consequently draws in each case an erroneous conclusion, for there can be no doubt whatever that, *as the perpendicular height of the inclined plane is increased, the pressure or friction of any carriage moving on that plane is reduced.*

* On referring to this diagram I find the length of the level line E A = 22, the length of each inclined plane = 34, and the elevation = 2.5; if, therefore, we deduct 2.5 from the length of F A, we shall find the reduction of friction or pressure nearly one-fifth.

Referring to the preceding diagrams, nothing can be so easy as to determine the *exact* proportion which subsists between the pressure or friction on an inclined plane, and the pressure or friction on a horizontal plane, provided the angle of elevation be given. In the case before us we have the angle F E B. Now, let P be the pressure on the base, or horizontal line F E, and let p be the quantity taken off that pressure, owing to the inclination of the plane, and let a be the angle of inclination: we then have in *all cases*—

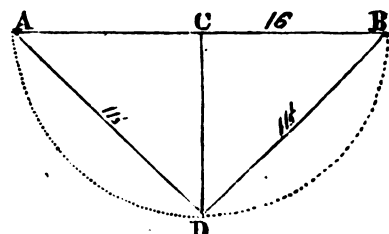
$$p : P :: F B : F E$$

$$\text{but } F B : F E :: \tan a : 1$$

$$\text{therefore } p : P :: \tan a : 1$$

$$\text{and, consequently, } p = P \tan a.$$

If, then, the amount of friction or pressure on an inclined plane (speaking abstractedly of friction or pressure) be reduced in proportion to the angle of inclination, it must, I should hope, be evident to "S. Y." that his position is wrong. He, no doubt, will allow that the pressure at an angle of 45° is reduced *one half*. To make myself, therefore, perfectly clear, I will take this angle to prove his formulæ *incorrect*, and the undulating theory, in regard to friction, *perfectly correct*:



Draw the line A B, and divide it into 16 equal parts. From the centre C describe the semicircle A D B. Draw the line C D perpendicular to A B, and from the points A and B draw the straight lines A D, B D.

Now, as before observed, because the perpendicular line C D is equal to the line B C, any weight descending on the line B D will press with exactly half the force with which it would have pressed on the level line A B, the angle C B D being an angle of 45°. Divide, then, the lines B D, A D, into an equal number of parts, each part being equal to $\frac{1}{16}$ of the horizontal line A B = 22. Next suppose a body, weighing 10 tons, to press upon every described part of the line A B, in passing from A to B: we then have 16 × 10 = 160; but if 10 tons press upon each part of the horizontal line, *half that weight*, according to the proposition, will only press upon each part of the lines B D, A D.

We have, therefore,

$$22\frac{1}{2} \times 5 = 112$$

and, consequently, 160—112=48 difference in total pressure.

But it may be argued, that if the semicircle A D B were divided into an equal number of like parts, the total number to be passed over on the curve would be 25.142; but this argument will not obtain, it being mathematically true (see Sir Isaac Newton, Parkinson, Hutton, and others,) that the velocities which bodies acquire in falling either down inclined planes, or curvilinear arcs, are precisely alike, viz. as the square roots of their perpendicular heights; and if the acquired velocities are equal, it is self-evident that the resistance opposed to motion down each line is also equal.

Let us now examine to what result "S. Y.'s" formulæ would bring us.

Let B represent B C

L " B D

n pounds equal to the force of traction on a level at any given velocity.

Then the pressure on the line B D (according to "S. Y.") will be to the pressure on the level as $\frac{B}{L}$ is to 1; and therefore the force of traction required in conse-

quence of friction on the inclined plane, will be to the force of traction on the level as $\frac{B}{L}$ is to n . According, then, to "S. Y.," the entire expenditure of power to move the wheel the horizontal distance on the level will be Bn , and on the inclined plane it will be $\frac{B}{L} \times L =$

Bn as before. Thus he makes, at an angle of 45° , the pressure or friction on the lines A D and B D equal to the pressure or friction on the horizontal line A B; whereas I make the difference in friction as 7 to 10, or $\frac{3}{10}$ ths in favor of the semicircle A D B.

Again, referring to "S. Y.'s" letter (No. 531), wherein he fully explains the bearing of his formulæ, the erroneous view which he has taken of the question is again evident. For, taking 5 ounces (as he suggests) to represent the force of traction on the level, and applying his observations to the angle of 45° , we shall find that the calculation will not be, as it would arise if his formulæ were correct, viz. $10 \times 5 = 80$ on the level, and $22 \cdot 40 \times 71429571 = 15 \cdot 999$, or very nearly 16; consequently, $16 \times 5 = 80$ on the inclined plane, as before.

But, instead of the force of traction on the semicircle being equal to the force of traction on the horizontal line, we should have it as follows:

$$16 \times 5 = 80 \text{ on the level,}$$

$$22 \cdot 40 \times 2 \cdot 50 = 56 \text{ on the curve,}$$

precisely agreeing with the reduction of friction before mentioned, viz. $\frac{3}{10}$ ths in favor of the semicircle.

So much for the question of friction, considered abstractedly, and as commonly understood; but it must be evident to every man who has perused the particulars of the experiments, that the amount of reduced friction, as in this instance considered, according to the angle of the inclination of the plane, cannot be taken as the precise measurement of power saved, by the adoption of the undulations. On these interesting points I trust that some valuable information may shortly be laid before the public in a treatise on railways,* locomotive engines, &c., which Mr. Robert Stephenson, sen., and myself, are preparing for the press. Previously to that time we shall try various experiments, and I have no doubt, from the plans which we intend adopting, and the precision with which the experiments will be made, that the laws of motion and resistance, under various circumstances and velocities, will be more clearly developed than they have hitherto been. The results which I anticipate lead me to quote a remark of Hooke's in the year 1666: "Gravity, though it seems to be one of the most universal, active principles in the world, and consequently ought to be the most considerable, yet has it had the ill fate to have been always, till of late, esteemed otherwise, even to slighting and neglect."

I have no apology to make to "S. Y." for considering L as a proper symbol for the length of the plane, which was ascended with a given velocity, especially as the spaces in most of the experiments varied on every trial. For an error in the last equation I, however, have to apologise, and I must beg "S. Y." to read $L + D$ for $L D$. The word "INVERSE," which he alludes to in his letter (No. 531, p. 23,) was an unintentional omission of mine (see page 222), where, for "is in proportion," I evidently intended to say, "is in inverse proportion." Any person who reads the sentence will, I hope, give me credit for this.

In reply to the observation of Junius Redivivus, (No. 532, page 38,) let me beg him to place a heavy ball upon a plank, then raise the plank to a vertical position—he will allow that, because the weight falls perpendicularly, there is no pressure on the plank. Let him,

then, raise the plank on which the same weight rests to an angle of 45° . He will, no doubt, admit that the weight will descend, and that the velocity of descent on the effect of the force of gravity will be in proportion to the diminution of pressure or friction on the plank. Let him next support the weight on the plank (the latter still being inclined at an angle of 45°), by placing his hand under it, or some machine by which he can accurately measure the pressure: he would, I have no doubt, find that precisely half the weight was resting on the plank, and half the weight upon his hand, or upon the instrument by which he was measuring the pressure. Let him, then, withdraw his hand, and what becomes of the weight? Half is still remaining on the plank, and the other half is suspended in the atmosphere until it reach the earth which attracts it. Surely, on consideration, Junius Redivivus will acknowledge the truth of this reasoning, and in so, he cannot dispute that the greater the angle of the inclination of the plane the less will be the pressure or friction of any body, either ascending or descending, on such plane.

And now for Mr. Champion Cheverton!

The first explanation which I think due from me to your readers, and to which "The Champion" principally alludes, is in reference to the resistance of the air. I stated, in a former letter, that I thought that the resistance of the atmosphere did not (a constant power being employed to urge the body forwards, or, like gravity, downwards,) increase as the squares of the velocity—that the resistance of the air does not act as a greater opposing force (alluding, particularly, to the flight of birds, and to the motion of railway carriages,) at high velocities than at low velocities—that, consequently, the velocity of a train of carriages, supposed to be descending an inclined plane of interminable length, never could in practice become uniform; but, on the contrary, that in theory the uniform acceleration would not begin to cease until the resistance of the air was equal to the force of descent, which it could not be until the body had attained a velocity equal to that at which air would rush into empty space. I further stated, that it was my opinion "that the resistance of the air, when first overcome by any locomotive force which is constantly and equally continued, does not, throughout equal spaces or distances, act as an opposing force with greater intensity at high velocities than at low velocities"; but that, on the contrary, it was my opinion that the total resistance of atmosphere, throughout a given distance, is less at high velocities than at low velocities, from the inclination which all bodies have to rise from the surface of the earth when in rapid motion, and, consequently, from a denser to a lighter atmosphere.

Now, sir, I should have felt not only that an explanation, but that a public apology was due from me, had I published these opinions, without having very strong reasons for believing them to be true. I know they are diametrically opposite to received opinions: so was the undulating railway; but time, and careful experiments, will prove whether I am right or wrong. I will now explain my reasons for believing that I am right.

In the first place, that there are many doubts existing as to the true theory of atmospheric resistance is evident, by the following remark by Hutton: "We conclude (he says) that all the theories of the resistance of the air hitherto given are very erroneous, and the preceding one (alluding to the generally entertained opinion) is only laid down till further experiments on this important subject shall enable us to deduce from them another that shall be more consonant to the true phenomena of nature." Surely this admission is a sufficient apology for the humble attempt which I have made, and for the attempt which Mr. R. Stephenson and myself are now making, to investigate this subject.

I must now request the attention of your readers to the following experiments, tried down inclined planes, by Mr. Nicholas Wood, with a view of measuring the friction of railway carriages. (See his work on Railways, 2d edition, pp. 211–213, &c. &c.)

Mr. Wood, in reference to these experiments, thus writes: "Standing on the end of a carriage, and aided by an assistant, at the end of every ten seconds I made a mark upon the plane where the carriage happened to be, and afterwards measured the distance between those marks, which gave the space passed over in each successive period."

Carriage weighing 9,100 lbs.; wheels, 34 inches; axle, 21; friction, 44·62 lbs.

Seconds.	Feet.	Real space, the descent not being uniform.
In 10 the body fell	6·6	6 feet.
20	26·4	26·4 "
30	59·4	59·8 "
40	105·6	106·2 "
50	165	165 "
60	237·6	242·8 "
70	321·4	326·7 "
80	422·4	424·3 "
90	534·6	525·3 "
100	660	635·5 "

The above experiment was tried at the Kenilworth colliery.

Now, in examining the result of this experiment, if Mr. Wood were correct in his measurement, and upon his correctness I have placed dependence, it is evident that the resistance of the atmosphere did not increase as the squares of the velocity of the moving body, but that, for some reason or other, with which reason the public will soon, if I mistake not, be acquainted, it was equal in effect through equal spaces throughout the entire distance of descent.

We know that if a body fall, in vacuo, a given space in the first second of time, it will have fallen four times the space in the two first seconds; that if it fall 16·1 in one second, it will have fallen 64·4 in two seconds; because $16 \cdot 1 \times 4$ (4 being the square of the times) = 64·4.

Again, if it fall 1608 feet in 10 seconds, it will fall 6432 feet in 20 seconds, or twice the time; because (omitting fractions) $1608 \times 4 = 6432$.

Now it appears, according to Mr. Wood's measured experiments, that in 10 seconds the carriage fell 6·6 feet, and in 20 seconds 26·4.

Now $6 \cdot 6 \times 4 = 26 \cdot 4$, which is in exact accordance with the laws of falling bodies.

Again, in 40 seconds, the carriage fell 105·6, and in 80 seconds 422·4.

$$\text{Now } 26 \cdot 4 \times 4 = 105 \cdot 6$$

$$\text{and } 105 \cdot 6 \times 4 = 422 \cdot 4$$

Again, in 30 seconds it fell 59·4, and in 60 seconds 237·6.

$$\text{Now, } 59 \cdot 4 \times 4 = 237 \cdot 6$$

Lastly, in 50 seconds it fell 165, and in 100 seconds 660;

$$\text{and } 165 \times 4 = 660$$

Now, had the resistance against the rolling carriage increased as the squares of velocity, the descent could not have been in accordance with the laws of bodies falling in vacuo.

I will, however, refer to other experiments, and try the question by another test:

Descent of loaded carriages weighing 9,408 lbs.; wheels, 35 inches diameter; axles, 3 inches.

In 18 seconds the carriage fell 25 feet

28	71·9 "
38	124·6 "
48	205·2 "
58	276·5 "
68	384·7 "
78	506·1 "
88	645·5 "
98	785·3 "
108	939·6 "
118	1081·6 "
128	1256·5 "

Fall, 1 in 104—friction, 41·45 lbs.

Now, in vacuo (taking 16 ft. as the correct measurement in the first second of time), a body in 18 seconds would fall 5210·892 feet, and in 28 seconds 12608·072 feet, and in 38 seconds 23223·852. Now, according to the preceding experiment, the carriage fell 25 feet

* The resistance of the atmosphere, and the cause of that resistance not increasing as the squares of the velocity, will be particularly elucidated in this treatise by careful experiment.

in 18 seconds; 71.9 in 28 seconds: and 124.6 in 38 seconds: Therefore,

$$\begin{array}{l} \text{In open atmosphere.} \quad \text{In vacuo.} \\ 71.9 \div 25 = 2.876, \text{ and } \frac{12608.072}{5210.892} = 2.419. \end{array}$$

$$\begin{array}{l} \text{Again, omitting fractions,} \\ \text{In open air.} \quad \text{In vacuo.} \\ 124 \div 71 = 1.746, \text{ and } \frac{23224}{12608} = 1.842. \end{array}$$

Again, to make the proof more indisputable (relying upon the measurement of Mr. Wood), we find that, according to his experiments, the carriage descended, omitting fractions, 25 feet in 18 seconds, and 1266 feet in 128 seconds. Now, as before observed, a body would fall, in vacuo, in 18 seconds, about 5211 feet, because $18 \times 18 \times 16.083 =$ to the total space; and in 128 seconds it would fall 263503.872 feet.

$$\begin{array}{l} \text{Now } 1266 \div 25 \text{ (in air)} = 50.64; \\ \text{and } 263503 \div 5211 \text{ (in vacuo)} = 50.56. \end{array}$$

How very striking, then, is the proportion which the falling body bears in vacuo to the descending body, when opposed to the resistance of the air! So much so, that Mr. Wood must either have imposed upon the public, which I do not and cannot believe, or his experiments, though not intended to elucidate the theory of resistance, are a death-blow to the previously admitted opinions on this subject.

Again, referring to Mr. Wood's experiments (see page 225), we find a perfect regularity in the descending motions; for instance, the carriage was 29.16 seconds in moving 100 feet, and 58.33 in descending 400 feet.

In other instances:

Time in descending 100 feet.	Time in descending 400 feet.
29.10 seconds	58.10
30	60.41
29.16	58.75
31.95	64.35

and all with different loads, varying from 1,120 to 8,960 lbs.

Again, page 226, when the carriage was loaded with 8,960 lbs. it fell 100 feet in 29 seconds, and 400 feet in 58.

Again, in 29 seconds it fell 57.90 feet.

Again, 29.10 "	"	58.40 "
Again, 29.74 "	"	60.25 "
Again, 31.88 "	"	63.75 "

the weights varying as before.

We will next observe whether the proportions were regular. In doing this we find (page 225) that the carriage, with a load of 1,120 lbs. fell 200 feet in 45 seconds, and 300 feet in 55 seconds. Now, in vacuo, a body would fall in 45 seconds - - - 32568.075 feet, and in 55 seconds - - - 48651.075 feet.

Now $300 - \frac{1}{4} = 200$, the fall in 45 seconds on the inclined plane; and $48651 - \frac{1}{4} = 32434$, showing a difference of only 134 in about 32,000.

In another experiment, with 4,480 lbs., the carriage fell 400 feet in 60.41 seconds, and 500 feet in 67.91 seconds.

Now, in vacuo, a body would fall in 60.41 seconds, 58512.7871523 feet; and in 67.91 " 74315.8133523 "

$$\begin{array}{l} \text{therefore, } 400 + \frac{1}{4} = 500 \\ 58512 + \frac{1}{4} = 73140, \text{ showing} \end{array}$$

a difference in comparative velocity not worth noticing.

Again, with 1120 lbs., in which instance, owing to the lighter weight, the resistance of the air ought to have been the most felt, we find the body descending,

$$\begin{array}{l} \text{In 64.35 seconds, 400 feet} \\ 72.64 \text{ " } 500 \text{ "} \end{array}$$

Now $400 + \frac{1}{4} = 500$, and $66958 + \frac{1}{4} = 83247$, showing a difference which is altogether immaterial; for had the distance traversed been 400 and 510 feet, instead of 400 and 500, the proportions in vacuo and in open atmosphere would have been precisely alike. Surely, then, these 10 feet, considering the variation of friction, by the occasional rubbing of the flanges against the

rail, will be regarded as a difference altogether independent of the resistance of air!

There are many more experiments of Mr. Wood's to which I could have referred in support of my opinion. It is true there are some which show a different result; but the effect might arise from the different state of the rails at different times, and the particular point from which the wind blew. It cannot, however, be doubted, or, if doubted, denied, that the uniformity of acceleration, proved by the experiments herein detailed, *could not have occurred in any instance had the resistance of the air increased as the squares of the velocity.*

I shall, in a further communication, turn to my recent experiments on the Liverpool and Manchester railway, for the purpose of adding additional strength to this argument. Meanwhile I am, sir, with much respect, your very obedient servant,

RICHARD BADNALL.

Manchester, Nov. 11, 1833.

THE NEW YORK AND PENNSYLVANIA CANALS.—According to the *Pittsburg Gazette*, the Pennsylvania Canal was open on the 8th inst., "and but for some repairs necessary to an aqueduct " might have been open a month earlier."

Our Canal will not be opened till 17th April—although the winter has been an unusually mild one. Hence we perceive a positive difference of *forty days*—and a possible one, under ordinary circumstances, of *two months*, in favor of the route to the great West through Pennsylvania.

This is a serious consideration for us in N. York, and should turn the attention of all to the adoption of some settled policy which may enable us to counteract so great a disadvantage. The physical obstacles of climate we cannot overcome, and hence it is certain that the Pennsylvania canals will always be open to navigation *weeks* earlier than ours. But this disadvantage may, we are persuaded, be more than compensated by wise policy on our part. Our first and great aim should be, so to diminish the expense of transportation on our Canals, as in that particular alone to present a powerful inducement to the trade. But how is that to be done? Manifestly by extinguishing as rapidly as possible the Canal debt; so that it being paid, there may be no motive to raise an amount of tolls greater than will suffice to keep the Canals in repair.

We have received the 5th number of a paper recently commenced at Navarino, (Wisconsin Territory,) called the *Green Bay Intelligencer*. It appears to have been about six weeks in travelling from Navarino to New York. The distance by land is 1100 or 1200 miles. Arrangements have been made for running steamboats regularly, the coming season, between Navarino and Detroit. During the last season, the number of arrivals was 34, viz. 5 steamboats, and 29 schooners. An emigrant recently arrived at Navarino thus writes:

The "extent of this settlement" is much more considerable than I had supposed before I came on. The houses are quite thick on each side of Fox River for six miles from its mouth. There are two small clusters of buildings, or villages, Navarino and Menomoneeville, in the first of which, being nearest the mouth of the river, the most of the business is done. In the distance of 3 miles from one village to the other, may be enumerated four wharves, seven warehouses, nine dry-good and grocery stores, besides several small shops, &c. &c. A good grist mill is in operation within one and a half miles of Navarino, and there are several saw mills in the neighborhood. Opposite to Navarino, on the west bank of Fox river, is a Garrison (Fort Howard) of 4 Companies of United States troops.

From "this place to the Wisconsin river" at the "Portage" the distance is 180 miles, following the river, and considerably less by land. Fox river is navigated by boats of 15 tons burthen all the way from here to the Portage; which is 1.4 miles over, and is all the land carriage between this and the Mississippi. This is a great and important thoroughfare. There are 3 settlements on the Wisconsin, besides the one at the Portage where Fort Winnebago stands, viz. Helena, English-Prairie and Prairie des Chiens, which last is at its mouth on the Mississippi. It is

210 miles from this to Chicago, the route is considerably travelled already, and the Government is opening a road the whole distance, also one from here to the Mississippi. The latter is laid out and is to be opened by contract immediately. The other will be surveyed early in the spring.—[*Journal of Commerce*.]

MAGNETIC POLE.—We understand that the position of the Magnetic Pole is now finally ascertained by our adventurous countryman, Captain Ross. He has actually been on the spot where the dipping needle becomes vertical, or points straight downwards; while the horizontal needle, having, as it were, no longer any thing to point towards, remains indifferently in any direction given it.—[*Athenæum*.]

Captain Ross has ascertained beyond question that the Magnetic Pole is nearly in 70° N. lat., and 97° W. long., being 2° of lat., and 3° of long. different from what it was said to be by Captain Parry's observations.—[*Naval and Military Gazette*.]

Animal Mechanics, or Proofs of Design in the Animal Frame. [From the Library of Useful Knowledge.]

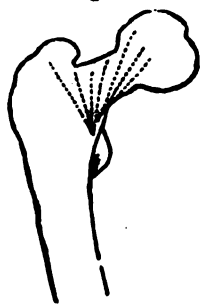
(Continued from page 135.)

Consider two men wrestling together, and then think how various the property of resistances must be: here they are pulling, and the bones are like ropes; or again, they are writhing and twisting, and the bones bear a force like the axle-tree between two wheels; or they are like a pillar under a great weight; or they are acting as a lever.

To withstand these different shocks, a bone consists of three parts, the *earth* of bone (sub-phosphate of lime); *fibres* to give it toughness; and *cartilage* to give it elasticity. These ingredients are not uniformly mixed up in all bones; but some bones are hard, from the prevalence of the earth of bone; some more fibrous, to resist a pull upon them; and some more elastic, to resist the shocks in walking, leaping, &c. But to return to the forms. Whilst the centre of the long bones is, as we have stated, cylindrical, their extremities are expanded, and assume various shapes. The expansion of the head of the bone is to give a greater, and consequently a more secure surface for the joint, and its form regulates the direction in which the joint is to move. A jockey, putting his hand on the knee of a colt, and finding it broad and flat, augurs the perfection of the full-grown horse. To admit of this enlargement and difference of form, a change in the internal structure of the bone is necessary, and the hollow of the tube is filled up with *cancelli*, or lattice-work. These *cancelli* of the bone are minute and delicate-like wires, which form lattice-work, extending in all directions through the interior of the bone, and which, were it elastic, would be like a sponge. This more uniform texture of the bone permits the outer shell to be very thin, so that whilst the centre of the long bones are cylinders, their extremities are of a uniform cancellated structure. But it is pertinent to our purpose to notice, that this minute lattice-work, or the *cancelli* which constitute the interior structure of bone, have still reference to the forces acting on the bone; if any one doubts this, let him make a section of the upper and lower end of the thigh bone, and let him inquire what is the meaning of the difference in the *lie* of these minute bony fibres, in the two extremities? He will find that the head of the thigh bone stands obliquely off from the shaft, and that the whole weight bears on what is termed the *inner trochanter*; and to that point, as to a buttress, all these delicate fibres converge,

or point from the head and neck of the bone, which may be rudely represented in this way.

Fig. 10.



The preceding figure exhibits the head of the thigh bone, and shows the direction of the *cancelli*, converging to the line of gravity.

We may here notice an opinion that has been entertained in regard to the size of animals. It is believed that the material of bone is not capable of supporting a creature larger than the elephant, or the *mastodon*, which is the name of an extinct animal of great size, the osseous remains of which are still found. This opinion is countenanced by observing that their bones are very clumsy, that their spines are of great thickness, and that their hollow cylinders are almost filled up with bone.

It may be illustrated in this manner: A soft stone projecting from a wall may make a stile, strong enough to bear a person's weight; but if it were necessary to double its length, the thickness must be more than doubled, or a free-stone substituted; and were it necessary to make this free-stone project twice as far from the wall, even if doubled in thickness, it would not be strong enough to bear a proportioned increase of weight: granite must be placed in its stead; and even the granite would not be capable of sustaining four times the weight which the soft stone bore in the first instance. In the same way the stones which form an arch of a large span must be of the hardest granite, or their own weight would crush them. The same principle is applicable to the bones of animals. The material of bone is too soft to admit an indefinite increase of weight; and it is another illustration of what was before stated, that there is a relation established through all nature, and that the very animals which move upon the surface of the earth are proportioned to its magnitude, and the gravitation to its centre. Archdeacon Paley has with great propriety taken the instance of the form of the ends of bones, as proving design in the mechanism of a joint. But there is something so highly interesting in the conformation of the whole skeleton of an animal, and the adaptation of any one part to all the other parts, that we must not let our readers remain ignorant of the facts, or of the important conclusions drawn from them.

What we have to state has been the result of the studies of many naturalists; but although they have labored, as it were, in their own department of comparative anatomy, they have failed to seize upon it with the privilege of genius, and to handle it in the masterly manner of Cuvier.

Suppose a man ignorant of anatomy to pick up a bone in an unexplored country, he learns nothing except that some animals have lived and died there; but the anatomist can, by that single bone, estimate not merely the size of the animal, as well as if

he saw the print of its foot, but the form and joints of the skeleton, the structure of its jaws and teeth, the nature of its food, and its internal economy. This, to one ignorant of the subject, must appear wonderful, but it is after this manner that the anatomist proceeds. Let us suppose that he has taken up that portion of bone in the limb of the quadruped which corresponds to the human wrist; and that he finds that the form of the bone does not admit of free motion in various directions, like the paw of the carnivorous creature. It is obvious by the structure of the part, that the limb must have been merely for supporting the animal, and for progression, and not for seizing prey. This leads him to the fact that there were no bones resembling those of the hand and fingers, or those of the claws of the tiger; for the motions which that conformation of bones permits in the paw would be useless without the rotation of the wrist—he concludes that these bones were formed in one mass, like the cannon bone, pastern-bone, and coffin-bones of the horse's foot.*

The motion limited to flexion and extension of the foot of a hooved animal implies the absence of a collar bone and a restrained motion in the shoulder joint; and thus the naturalist, from the specimen in his hand, has got a perfect notion of all the bones of the anterior extremity! The motions of the extremities imply a condition of the spine which unites them. Each bone of the spine will have that form which permits the bounding of the stag, or the galloping of the horse, but it will not have that form of joining which admits the turning or writhing of the spine, as in the leopard or the tiger.

And now he comes to the head: the teeth of a carnivorous animal, he says, would be useless to rend prey unless there were claws to hold it, and a mobility of the extremities like the hand to grasp it. He considers, therefore, that the teeth must have been for bruising herbs, and the back teeth for grinding. The socketing of these teeth in the jaw gives a peculiar form to these bones, and the muscles which move them are also peculiar; in short, he forms a conception of the shape of the skull. From this point he may set out anew, for by the form of the teeth he ascertains the nature of the stomach, the length of the intestines, and all the peculiarities which mark a vegetable feeder.

Thus the whole parts of the animal system are so connected with one another, that from one single bone or fragment of bone, be it of the jaw, or of the spine, or of the extremity, a really accurate conception of the shape, motions, and habits of the animal may be formed.

It will readily be understood that the same process of reasoning will ascertain, from a small portion of a skeleton, the existence of a carnivorous animal, or of a fowl or of a bat, or of a lizard, or of a fish; and what a conviction is here brought home to us, of the extent of that plan which adapts the members of every creature to its proper office, and yet exhibits a system extending through the whole range of animated beings, whose motions are conducted by the operation of muscles and bones.

* For these are solid bones, where it is difficult to recognize any resemblance to the carpus, metacarpus, and bones of the fingers; and yet comparative anatomy proves that these moveable bones are of the same class with those in the solid hoof of the *bellus* of Linnaeus.

After all, this is but a part of the wonders disclosed through the knowledge of a thing so despised as a fragment of bone. It carries us into another science; since the knowledge of the skeleton not only teaches us the classification of creatures now alive, but affords proofs of the former existence of animated beings which are not now to be found on the surface of the earth. We are thus led to an unexpected conclusion from such premises: not merely the existence of an individual animal, or race of animals, but even the changes which the globe itself has undergone in times before all existing records, and before the creation of human beings to inhabit the earth, are opened to our contemplation.

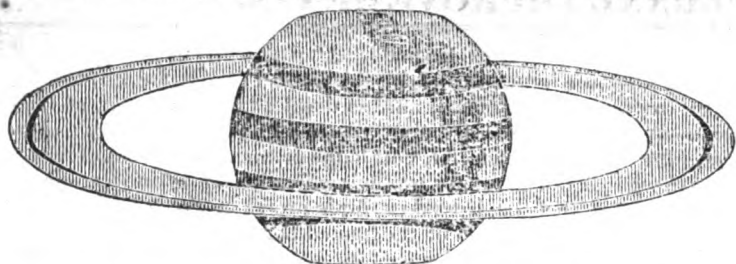
OF STANDING.—This may appear to some a very simple inquiry, and yet it is very ignorant to suppose it is so. The subject has been introduced in this fashion: "Observe these men engaged in raising a statue to its pedestal with the contrivances of pulleys and levers, and how they have placed it on the pedestal and are soldering it to keep it steady, lest the wind should blow it down. This statue has the fair and perfect proportions of the human body; to all outward appearance it ought to stand."

In the following passage we have the same idea thrown out, in a manner which we are apt to call *French*. Were a man cast on a desert shore, and there to find a beautiful statue of marble, he would naturally exclaim, "Without doubt there have been inhabitants here: I recognize the hand of a famous sculptor: I admire the delicacy with which he has proportioned all the members of the body, to give them beauty, grace, and majesty, to indicate the motion and expression of life." But it may be asked, what would such a man think if his companion were to say, "Not at all; no sculptor made this statue; it is formed, to be sure, in the best taste, and according to the rules of art, but it is formed by chance. Amongst the many fragments of marble there has been one thus formed of itself. The rain and the winds have detached it from the mountain, and a storm has placed it upright on the pedestal. The pedestal, too, was prepared of itself in this lonely place. True, it is like the Apollo, or the Venus, or the Hercules. You might believe that the figure lived and thought; that it was prepared to move and speak; but it owes nothing to art—blind chance has placed it there."*

The first passage suggests the conviction, that the power of standing proceeds not from any symmetry, as in a pillar, or from gravitation alone. It, in fact, proceeds from an internal provision, by which a man is capable of estimating with great precision the inclination of his body, and correcting the bias by the adjustment of the muscles. In the second passage, it is meant to be shown that the outward proportion of the form bears a relation to the internal structure; that grace and expression are not superficial qualities, and that only the Divine Architect could form such a combination of animated machinery.

We shall consider how the human body is prepared by mechanical contrivances to stand upright, and by what fine sense of the gravitation of the body the muscles are excited to stiffen the otherwise loose joints, and to poise the body on its base.

* *Demonstration de l'Existence de Dieu, par Fanelon.*



OF SATURN.—The planet Saturn is 79,491 miles in diameter, and performs his revolution round the sun in 10,746 days, 19 hours, 16 minutes, at the distance of 903,690,197 English miles. His motion in his orbit is said to be 18,000 miles per hour; and the time he revolves on his axis 10 h. 16' by some astronomers, and by others only 6 hours.

Saturn is distinguished from all the other planets by a large luminous ring surrounding his body, which was discovered by the celebrated Huygens, about the end of the 17th century. The same astronomer also discovered the fourth satellite, which attends this planet, and on that account is sometimes called the Huygenian satellite. The ring which surrounds Saturn appears double when seen through a good telescope, and is seen to cast a deep shadow on the planet. Dr. Herschel is of opinion that the ring has a motion round its axis; but this is doubted by Schroeter, and some other astronomers. Respecting the formation of this strange phenomenon, astronomers have been very different in their opinions, but the difficulty still remains as formidable as ever.

The annexed figure represents this planet as seen by Sir William Herschel, on various occasions, with his powerful telescope.

To Saturn the sun appears only one-ninth part of the size it does to the earth; and the light and heat which that planet receives from the sun are in the same proportion. But to compensate for the scantiness of light derived from the sun, Saturn has been observed to have no fewer than seven satellites revolving round him, besides the luminous ring that surrounds his body. The Huygenian, or fourth satellite, was the first discovered; the first, second, third, and fifth, were some years afterwards discovered by Cassini; and the sixth and seventh were discovered by Dr. Herschel, in the year 1789. These satellites are all so small, and at such a distance from the earth, that they cannot be seen, unless with very powerful telescopes.

The orbit of the planet Saturn was long considered as the boundary of the solar system, except the cometary orbits, which were always believed to stretch far beyond it. But by the discovery of the planet Georgium Sidus, this system has been extended far beyond the limits formerly assigned it.

OF GEORGIUM SIDUS.—A new planet was discovered by Dr. Herschel, on the 13th of March, 1781, and called by him Georgium Sidus, out of respect to his Majesty George III., but astronomers have given it the names of Herschel and Uranus. This planet is situated far beyond the orbit of Saturn, being at the immense distance of 1,822,568,000 miles from the sun. The time it requires to perform its revolution round that luminary is 83 years, 150 days, 18 hours. Its diameter is about $4\frac{1}{2}$ times greater than that of the earth, or nearly 35,000 English

miles. The distance of this planet from the sun being about double that of Saturn, can scarcely be discovered by the naked eye. However, when the sky is very clear, it may be perceived by a good eye, like a faint star of the fifth magnitude; but it cannot be readily distinguished from a fixed star with a telescope of a less magnifying power than 200. This planet is placed at so great a distance from the sun that it can receive but a very small portion of his light; however, this want is in some measure supplied by six satellites that revolve round it, all of which were discovered by Dr. Herschel. The periodic times of these satellites are as follows: The first is 5d. 21h. 25'; the second, 8d. 7h. 1' 19"; the third, 10d. 23h. 4'; the fourth, 13d. 11h. 5'; the fifth, 38d. 1h. 49'; and the sixth, 107d. 16h. 40'. It is a remarkable circumstance that all these satellites move round the planet in a retrograde order, and that their orbits are nearly all in the same plane, almost perpendicular to the ecliptic.

NEW INK DISTRIBUTOR.—We were lately shown, by WARREN JENKINS, of this town, a new or improved machine, invented by himself, for regulating, with mathematical exactness, the distribution and application of ink to the types. This machine is the first attempt of the kind by the inventor, and, therefore, imperfect in some of its mechanical details; but, in its present condition, it answers the intended purpose very well. We have scarcely a doubt that the principle upon which the machine is constructed is correct, and that a more perfect mechanical construction of all its parts will make it fully to answer the purposes for which it is designed.

Should our anticipations be realized, and there seems little room to doubt that they will, an ordinary pressman, with the assistance of a boy capable of moving the rollers, can take any number of clear, uniform impressions, extending throughout a whole form or a whole book. This machine will, therefore, be no less important to readers who desire beauty and uniformity in what they read, than to printers who are responsible for the quality of their work.

When the machine is once regulated so as to take a suitable quantity of ink, which will be the labor of but a few minutes, the pressman is relieved from further care in relation to the uniformity of the impressions, as the application of the ink to the rollers is entirely beyond the control of the boy who does the rolling. We may also add, that the machine is of simple construction, and of course, little liable to get out of order; whilst the cost will probably place it within the reach of every person owning a press. Several other advantages might be enumerated, but we think enough has been said to entitle it to the consideration of printers.—[Cincinnati Journal of Science.]

STATISTICS OF BREWING IN ENGLAND AND SCOTLAND.—There were 216 brewers in Scotland last year, of which above 33 are in the Edinburgh collection. Argyll has only one. There are 17,070 licensed victuallers in Scotland, which is 1 for every 123 persons, young and old, in the country; and though grocers who

sell beer are evidently included with innkeepers, the proportion is still very great. England, which is a thirsty country, rejoices in 50,800 victuallers, and 30,000 "persons licensed for the general sale of beer," making an aggregate of 81,700 retailers of beer, which is 1 for every 170 souls. England has 1753 brewers, of whom 108 are in London. Of the retailers of beer, 37,000, or nearly one-half, brew their own beer. In Scotland, only 318 out of 17,070, or 1 in 57, brew their own beer. In Scotland, 990,000 bushels of malt were used for brewing in all the 16 collections, of which one-tenth was used by the licensed victuallers; 432,000 bushels were used in the Edinburgh collection; 62 bushels served the two collections of North and South Argyll, containing 100,000 souls. In England, 25,800,000 bushels of malt were consumed in the manufacture of beer: 13,800,000 by the brewers, and 12,000,000 by the victuallers or other retailers. In Scotland, the malt brewed is at the rate of four-tenths of a bushel for each person; in England it is $1\frac{1}{2}$ bushel. Ireland consumed 1,540,000 bushels of malt in her breweries, which is about two-tenths of a bushel for each person. Of brewed liquor, one Englishman drinks as much as four Scotchmen, or nine Irishmen. In 1831, there were 928,000 bushels of malt used for brewing in Scotland, of which 834,000 were used by the brewers, the rest by victuallers. In 1830, the Scotch brewers consumed 740,000, but the paper from which this is taken does not mention the victuallers. The increase in the quantity of malt used by the brewers since 1830 seems to be about one-fifth.

AGRICULTURE, &c.

Early sown Vegetables inferior in Quality and Quantity to those sown later. By H. H. [For the Quarterly Journal of Agriculture, Mechanics, and Manufactures.]

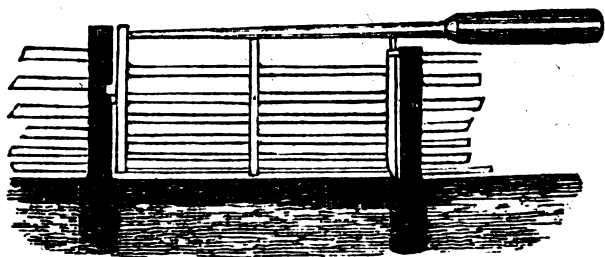
MR. EDITOR.—The season is now approaching us rapidly when we shall be served with a variety of means and methods for procuring early culinary productions for the table. I do not know but there is room for improvement in this respect—doubtless, there is with many; but you will permit me to say that I have not a profound regard for a forced growth with any article in the vegetable kingdom. My reasons for viewing the subject in this light I will give. 1st. Because persons in general cannot make the necessary preparations, and bestow the extra care and service required to secure those early productions, and find themselves remunerated by the article. Persons who cultivate grounds with a view to supply a market may find themselves compensated for their labor in the sale of these early productions, and gentlemen of fortune can gratify their cravings for those premature productions a few days earlier than their neighbors, by applying time and money to that object; but this will not prove that the generality of your readers can adopt this course without a loss of time and money. 2. As far as my own experience is concerned, those forced productions are inferior in point of flavor to those which come in their season; and are often of a sickly quality. They are generally thrown into the market in an unripe state, when they possess scarcely any of the qualities which they obtain in their maturity; and the consequence is, sickness is prevalent in our cities. I recollect to have seen, within a few years past, a remonstrance from the Board of Health in Boston, or from the most eminent physicians of that city, against the practice I am now speaking of, and particular objection was made to the forced growth of the cucumber, and its early sale in

market. This accorded so far with my own limited observation in the country, that I could not but consider it entitled to special consideration. 3. I am well satisfied, by my own observation, that more persons in the country deprive themselves of the luxuries of a good garden every year, by sowing too early, than they do by sowing too late, or not sowing at all. There is one remark almost universal every year with those whose gardens I have inspected during the season—"I sowed my seeds early, and they came up and looked thrifty for a while, but there came on a cold, wet spell of weather, which, with the aid of insects, destroyed them, about every one." There is, however, a remedy for this in almost every instance, in resowing after the destruction of the first sowing, if persons did not generally think that it would avail nothing to resow so late in the season. I have been in the practice, for a number of years, of noting down the month and the day in each year when I committed my different kinds of seeds to the soil, and this I have done on the bottom lands in the Connecticut valley, and on the high lands of New-England, and I find this note appended to my journal for June 15th, 1832,—"I am now fully convinced, that, with the exception of onions, peas, pepper-grass, lettuce, English turnips, and a few potatoes for early use, all kinds of horticultural produce, which are generally cultivated in New-England, will succeed best, nine times in ten, by not sowing until the last week in May." On the 27th of May, 1830, I planted my cucumbers, and they yielded abundantly. May 21, 1831, I planted cucumbers; on the 23d, I planted some more and on the 1st of June planted again. Those planted on the 21st of May failed, and those planted on the 1st June did better than those on the 23d of May. On the 18th of May, 1832, I planted cucumbers, and on the 2d of June I planted some more, and on the 4th of June I replanted where I sowed on the 18th of May, the first planting having failed; the last succeeded well. On the 31st of May of this same year, I replanted early bush beans, where I had planted on the 18th of this month with a failure. And on the 20th of June, I resowed the parsnip-bed, which was first sowed on the 8th of May; and from this last sowing I realized a good crop of parsnips. On the 23d of May sowed carrots, beets, peppers, cabbages, radishes, English turnips, and planted my cucumbers. All succeeded well, whilst most of my neighbors who sowed earlier were cut short in quality and in quantity. I will state in this connection that, in two instances, I have raised the finest onions I have ever raised from sowings in the first week in June, but they will ordinarily succeed better from early sowing. And now, if we will allow for difference of soil, and something for local situation, I will venture to have my position put to the test by the people of New-England, and by all others at the west of us, upon the same degrees of latitude, that, nine times in ten, what is considered *late* sowing will succeed best, with the exceptions I have made. One special reason is, as I conceive, vegetation never progresses rapidly until the soil and atmosphere attain to a certain degree of temperature, and it succeeds best when this is uniform. Cool nights are prejudicial to plants of all descriptions, so far as my experience extends; and to many they are almost fatal: they are so to the cucumber. A

warm sun and a bland atmosphere during the day will put the juices of the plant into circulation, and open the pores; but if the succeeding night is cool, those juices stagnate, the pores close, and the progress of vegetation is suspended, and if this is acted over for many nights in succession, the stock of the plant assumes a sticky hardness, the pores are fast closed, and the channels for the sap to circulate in are contracted so as greatly to impede the progress of the fluids during the day; and although the plant survives the shock, yet it is a sickly plant, its leaves and tendrils are dwarfish and dry, and its fruit is scanty, bitter, and crooked, and indented with dark spots; whereas, the plant that comes into existence later in the season, when the earth is warm and the nights are bland, continues its growth through the twenty-four hours, has a fresh and lively appearance, overtakes and passes by its kindred vine, that has been long struggling with adversity; its fruit is straight, juicy, and abundant. Another reason why

many of those early sown plants fail, is, because those small insects, called black lice, or fleas, prevail most during the cold season in May, and they draw from the plant the little life it derives from the earth, and it yields its life to an ignoble enemy! I would say, then, to my New-England friends especially, be not over anxious to commit your garden seeds to the soil, because you experience a few warm days in the beginning or in the middle of May, except those kinds of plants which experience has shown are the least affected by the cold and wet, and which require the longest season to reach maturity. You may be certain of a cold fortnight between you and summer, during which time, your seeds had better be out of the ground than in; but this you *may* do, and *ought* to do,—improve your *kind* of plants, have your ground well prepared for receiving the seed, and embrace the first sure indications of approaching summer to commit your seeds to the earth and to a beneficent Providence.

Respectfully yours, H. H.



Balance Gate. By D. LAPHAM. [From the Farmers' Reporter.]

SIR,—If the following improvement in the construction of farm gates should be deemed of sufficient value to be of use to the farmers of this country, you are requested to make it known to them through the medium of your valuable paper.

This gate consists of two main posts, set firmly in the ground at the proper distance asunder, in the line of the fence; that part which is above the ground is made about 12 inches square, and the lower part is left round, forming a shoulder at the surface of the ground. These posts have mortices on the exterior sides to receive the rails of the fence. The gate itself is formed of three posts of scantling, 4 by 5 inches square, into which are framed about six strips of 1½ inch boards, 4 inches wide, so as to form a rectangular gate of the length and height required. Upon the top of these posts rests a beam, which extends back far enough just to balance the gate. The heel-post, upon which the gate turns, rests upon the shoulder of the main post, at the surface of the ground, where there is a depression made to receive it, and it is secured at the top by a staple, or hoop of iron, passing around it, (the upper part of the post being rounded for that purpose,) and is fastened into the main post. The latch or fastening is formed by making one of the slats pass through the front post in a long mortice; and the slat being cut in two at the middle post, and secured by a pin, the piece can be raised or lowered in such a manner as to latch and unlatch the gate. The notch is cut out of the main post, to receive the latch in such a manner as to allow the gate to open either way. This gate is much neater, more substantial, and is less liable to get out of repair, than those formerly in use. There are two

gates of this description on the farm where my father resides, in the north part of Champaign county, and he intends soon to have one to each of his fields. D. LAPHAM. Cincinnati, Ohio, Dec. 19, 1833.

STRAW CUTTING MACHINE.—A few weeks ago, we purchased for a subscriber on the eastern shore of Maryland, one of Sinclair & Moore's straw cutters, of the middle size. We this week received from him the following testimony of its excellence, which we publish rather for the benefit of the public, than for that of the worthy manufacturers. By the way, it seems to be universally allowed by all who have tried it, that the saving by the cutting of *all long food* for stock is a very important one. We have noticed the testimony of farmers, of graziers, of dairy-men, and of stage proprietors, all to the same point, and have never heard one state a contrary opinion against it. Those who have tried steaming this cut food, seem to agree pretty unanimously that this operation improves its quality still as much more. Surely these facts are worthy the careful attention of all concerned in the feeding of cattle and horses—but here is an extract from our friend's letter:

"I am delighted with my straw cutter. It will have saved all the money it cost before May-day. The 'meat, drink, washing and lodging,' of each of my carriage horses, cost me the last year at least \$100: by means of the straw-cutter, I can give them better board, keep them sleeker and happier; and (at the present price of produce) *both* of them, the current year, will not cost me more than \$60. I shall be the means of procuring a market for several straw-cutters, at which I rejoice, not on account of the seller, but the buyer.—[Amer. Farmer.]

EXTRACT OF SUMAC.—This substance is prepared in Sicily, and is used for dyeing and tanning skins. It occupies the one-hundredth part of the volume of common sumac. It is dissolved in tepid water.

THE VINE.—Mr. Sidney Weller says, in the American Farmer, that vines, when young, should have the ground kept loose about them, and free from weeds—that they will no more bear neglect in these particulars than corn or other hoed crops.

BLOODY MURRAIN.—A farmer in Madison county, Ohio, had lost several of his finest cattle by this disease, and upon opening them he found leeches in their stomachs, much swollen by the blood they had extracted, and it was also found that leeches were living in the water at which the cattle were in the habit of drinking. Believing that this was the cause of the disease he changed the water, and in future only gave them that which was pure; and for three years his stock had not been troubled with that disease. Although this seems to show very conclusively that leeches are the cause of the disease, yet it requires further investigation before the question can be entirely settled.—[Gen. Far.]

HOW TO MAKE THE MOST OF A LITTLE LAND.—In the spring of 1830, I purchased in this city a house and lot; the lot was fifty by one hundred and twenty feet. One third of the lot was covered by the building. When I purchased, there was not a tree, shrub or plant, on the premises, notwithstanding the house had been constantly occupied for near forty years. I planted the first tree in the spring of 1831. I at that time planted three peach and three gage trees. One of the peach and the three gage trees bore fruit the past season. I have since added three more peach, four choice plum, one choice cherry, one quince, and four choice pear trees, which bid fair to bear fruit soon. I have also three fine grape vines, that will probably bear plentifully next season, judging from their size. I have also about a dozen smaller vines. I raised on the same ground the past season, cucumbers, beets, sallads, citron melons, and nasturtiums, in great abundance for family use and for pickling. I also had a great abundance of cabbage, both for summer and winter use. In addition to the above, I have at least fifty flowering shrubs and bushes, such as roses, syringoes, altheas, lilacs, snowballs, rose acacias, flowering almonds, cape jasmines, &c. &c., with a plenty of the honeysuckle. I have at least two thousand bulbous roots, such as hyacinths, tulips, crocuses, narcissus, &c., with equal that number of annual and biennial plants and flowers, and all of the aforementioned luxuries and necessities are enjoyed from the spot of ground that has laid waste for so great a length of time. There is still another item of profit to be added to the foregoing list: nine-tenths of the labor of cultivation has been performed with my own hands, morning and evening, when not engaged in my own regular business, unquestionably affording me a greater degree of health, and certainly a far greater degree of pleasure, than I should otherwise have enjoyed. I have also a lot in the rear of the above-mentioned, twenty-five by one hundred and twenty feet, on which there is a barn, cowshed, and pig-stye, covering forty by twenty-five feet, leaving eighty by twenty-five feet for cultivation. Around this I have a border of two feet wide, one fourth of which is occupied by currant bushes, one fourth by raspberry, one fourth as an asparagus bed, and one fourth for spinnage, for a cabbage plant bed, for early lettuce, &c. The centre is laid out in three squares of seventeen by twenty-three feet. The first square I plant with early potatoes, the second with Lima

beans, and the third with sweet corn; of the two latter, I have a great supply for my family, and some for my neighbors. Potatoes we have of the finest kind, and in great abundance through the summer season. Last fall we put about four bushels in the cellar from the same patch. We were in the summer nine in family, in the winter eight. The edge of my border I planted with bush beans; and I do not recollect that I paid a single cent for vegetables, except for the articles of green peas, and a few carrots and parsnips, the latter two of which I did not have of my own in consequence of sowing bad seed. I give you the above statement of facts, with the hope that if you should think them worth publishing, some one person may be induced to try the experiment, when he will learn that it will not only afford him a source of profit, but one of great pleasure, to grow his own vegetables; and that, while by beautifying his yard, he is not only adding to his health and comforts, but, in most cases, adding very much to the value of his property.—M. Hudson, Feb, 7, 1834.—[Gen. Far.]

BLIGHT ON APPLE TREES.—Our apple trees here are greatly injured, and some annually destroyed, by the agency of what seems to be a very feeble insect. We call it, from habit or from some unassigned cause, "the American Blight," *Aphis lanata*; this noxious creature being known in some orchards by the more significant name of "white blight." In the spring of the year a slight hoariness is observed upon the branches of certain species of our orchards. As the season advances this hoariness increases, it becomes cottony, and toward the middle or end of summer, the under sides of some of the branches are invested with a thick downy substance, so long as at times to be sensibly agitated by the air. Upon examining this substance we find that it conceals a multitude of small wingless creatures, which are busily employed in preying upon the limb of the tree beneath. This they are well enabled to do, by means of a beak terminating in a fine bristle: this being insinuated through the bark, and the sappy part of the wood, enables the creature to extract, as with a syringe, the sweet vital liquor that circulates in the plant. This terminating bristle is not observed in every individual: in those that possess it, it is of different lengths; and is usually, when not in use, so closely concealed under the breast of the animal as to be invisible. The albumen or sap wood being thus wounded, rises up in excrescences and nodes all over the branch, and deforms it; the limb deprived of its nutriment, grows sickly: the leaves turn yellow, and the part perishes. Branch after branch is thus assailed until they all become leafless, and the tree dies.

This insect is viviparous, or produces its young alive, forming a cradle for them by discharging from the extremities of its body a quantity of long cottony matter, which becoming interwoven and entangled, prevents the young from falling to the earth, and completely envelopes the parent and offspring. This languinous vestiture seems to serve likewise as a vehicle for dispersing the animal. The winds wafting about small tufts of this downy matter, convey the creature with it from tree to tree throughout the whole orchard. In the autumn, when this substance is generally long, the winds and rains of the season effectually disperse these insects, and we observe them endeavoring to secrete themselves in the crannies of any neighboring substance.

The first visit of this aphid to us is by no means clear. The epithet of American blight may be correctly applied; but we have no sufficient authority to conclude that we derived this pest from that country. Normandy, and the Netherlands too, have each been supposed to have conferred this evil upon us; but it bids fair to destroy, in progression, most of the old-

est and long esteemed fruit from our orchards. —I have very successfully removed this blight from young trees, and from recently attacked places in those more advanced, by an easy application: Melt three ounces of rosin in an earthen pipkin, take it from the fire, and pour into it three ounces of fish oil; the ingredients perfectly unite, and when cold acquire the consistence of honey. A slight degree of heat will liquify it; and in this state paint over every node or infected part in the tree, using a common painter's brush. This I prefer doing in the spring, or as soon as the hoariness appears. The substance soon hardens and forms a varnish, which prevents any escape, and stifles the individuals.—[Journal of a Naturalist.]

EARLY CORN.—There are three varieties of corn that every farmer should plant, expressly for using green, without reference to it as a field crop. There are but few people in this country but are fond of boiled green corn; and by a little extra pains the season for using it may be lengthened three or four weeks; that is, it may be procured one month earlier than it generally is by the common field culture.

The varieties which we would recommend are the *Golden Soix*, *Flour Corn*, or *York Cheat*, and the *Sweet Corn*.

Golden Soix is the earliest corn with which we are acquainted; the ear is small but well shaped, and the corn is well flavored.

Flour Corn, or *York Cheat*, is a white soft corn, which comes in soon after the former; the ears are of good size, and it does not become hard and flinty, like common corn, on which account it continues longer fit for use. This will last until the sweet corn is fit for use. This corn was named *York Cheat*, because it was said to have been ground with wheat, in the early settlements of this country, when it could not be detected by the color of the flour. When broken, the inside of the kernel is white and mealy.

Sweet Corn.—This is undoubtedly superior to all other varieties for boiling; is very sweet, and unlike other varieties, it remains soft until it hardens by drying, when it becomes much shrivelled.

Either, or all of these varieties, may be planted in hot beds, or in light boxes of earth, which may be kept in warm situations about a house, until the fore part of May, when the plants may be taken out of the beds or box, and planted in hills in open ground, putting plenty of manure under the hill, and setting the plants pretty deep in the soil, so that if the tops should be killed by late frosts, the roots would not be injured.—[Goodsell's Genesee Farmer.]

ROLLING GRAIN.—We have on several occasions presented to our readers the results or using the roller. We now give another extract—from the Genesee Farmer.

On a careful examination of my wheat fields, the doubts I have felt and expressed in a former communication, of the propriety of rolling wheat in autumn, are now entirely removed. Where the roller had passed no cavities were left, and the surface was rendered so compact and smooth, that the water passed off. But where the roller was not used, many of the cavities have been several times, and no doubt will again be, partly filled with ice, which must unavoidably, by its expansion, destroy many plants by breaking their roots.

The season is so far advanced that we cannot expect, even should there be considerable more snow, that it will remain long on the ground; of course, wheat will be exposed to alternate freezing and thawing. This is out of the power of the farmer to prevent, but he may mitigate its effect by the use of the roller in the spring, as soon as the ground is dry to the depth of three or four inches. This operation will not only press down that which has been raised by the frost, but by pulverizing the surface, cause the wheat to spread, and if grass seed has been sown, the beneficial effect on that will be great.

I have therefore come to the conclusion, that the wheat crop is benefited by the roller both in autumn and spring.

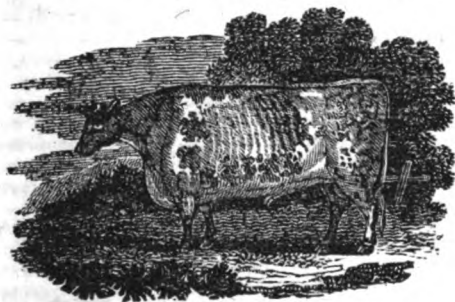
NEAT CATTLE OF GREAT BRITAIN.—We give descriptions of the principal breeds of British cattle :

The long-horned or Lancashire breed of cattle is distinguished from others by the length



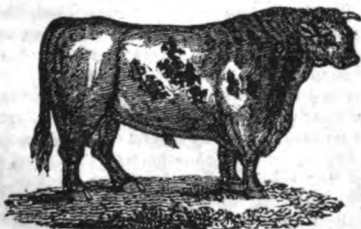
of their horns, the thickness and firm texture of their hides, the length and closeness of their hair, the large size of their hoofs, and coarse, leathery, thick necks; they are likewise deeper in their fore quarters, and lighter in their hind quarters, than most other breeds; narrower in their shape, less in point of weight than the short horns, though better weighers in proportion to their size; and though they give considerably less milk, it is said to afford more cream in proportion to its quantity. They are more varied in their color than any of the other breeds; but, whatever the color be, they have in general a white streak along their back, which the breeders term finched, and mostly a white spot on the inside of the hough. In a general view, this race, notwithstanding the singular efforts that have been made towards its improvement, remains with little alteration; for, excepting in Leicestershire, none of the subvarieties (which differ a little in almost every one of those counties where the long horns prevail) have undergone any radical change or any obvious improvement.

The improved breed of Leicestershire is said to have been formed by Webster, of Cauley,



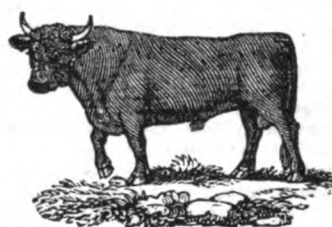
near Coventry, in Warwickshire, by means of six cows brought from the banks of the Trent, about the beginning of the present century, which were crossed with bulls from Westmoreland and Lancashire. Bakewell, of Dishley, in Leicestershire, afterwards got the lead as a breeder, by selecting from the Cauley stock; and the stocks of several other eminent breeders have been traced to the same source.

The short-horned, sometimes called the Dutch breed, is known by a variety of names.



taken from the districts where they form the principal cattle stock, or where most attention has been paid to their improvement; thus, different families of this race are distinguished by the names of the Holderness, the Teeswater, the Yorkshire, Durham, Northumberland, and

other breeds. The Teeswater breed, a variety of short horns, established on the banks of the Tees, at the head of the vale of York, is at present in the highest estimation, and is alleged to be the true Yorkshire short-horned breed. Bulls and cows from this stock, purchased at most extraordinary prices, are spread over all the north of England, and the border counties of Scotland. The bone, head, and neck of these cattle are fine; the hide is very thin; the chine full; the loin broad; and the carcass throughout large and well-fashioned; and the flesh and fattening quality equal, or perhaps superior, to those of any other large breed. The short-horns give a greater quantity of milk than any other cattle: a cow usually yielding twenty-four quarts of milk per day, making three firkins of butter during the grass season: their colors are much varied, but they are generally red and white mixed, or what the breeders call flecked. The heaviest and largest oxen of the short-horned breed, when properly fed, victual the East India ships, as they produce the thickest beef, which, by retaining its juices, is the best adapted for such long voyages.



The Devonshire cattle are of a high red color, (if any white spots, they reckon the breed impure, particularly if those spots run one into another), with a light dun ring round the eye, and the muzzle of the same color, fine in the bone, clean in the neck, horns of a medium length, bent upwards, thin-faced, and fine in the chops, wide in the hips, a tolerable barrel, but rather flat on the sides, tail small, and set on very high; they are thin skinned, and silky in handling, feed at an early age, or arrive at maturity sooner than most other breeds. Another author observes, that they are a model for all persons who breed oxen for the yoke. The weight of the cows is usually from thirty to forty stone, and of the oxen from forty to sixty: the North Devon variety, in particular, from the fineness in the grain of the meat, is held in high estimation in Smithfield.



The polled or hornless breeds.—The most numerous and esteemed variety is the Galloway breed, so called from the province of that name, in the south-west of Scotland, where they most abound. The true Galloway bullock "is straight and broad on the back, and nearly level from the head to the rump, broad at the loins, not, however, with hooked bones, or projecting knobs, so that, when viewed from above, the whole body appears beautifully rounded; he is long in the quarters, but not broad in the twist; he is deep in the chest, short in the leg, and moderately fine in the bone; clean in the chop and in the neck; his head is of a moderate size, with large rough ears, and full, but not prominent eyes, or heavy eyebrows, so that he has a calm though determined look; his well-proportioned form is clothed with a loose and mellow skin, adorned with long soft glossy hair." The prevailing color is black or dark-brindled, and, though they are occasionally found of every color, the dark colors are uniformly preferred, from a belief that they are connected with superior hardiness of constitution.

The Galloways are rather undersized, not very different from the size of the Devons, but as much less than the long horns as the long horns are less than the short horns. On the best farms the average weight of bullocks three and a half years old, when the greater part of them are driven to the south, has been stated at about forty stone, *avoirdupois*; some of them, fattened in England, have been brought to nearly one hundred stone.

LIME AND ANIMAL MANURE FOR WHEAT.—Lime has been found by chemical analysis to compose a very considerable portion of the kernel of wheat. It has also been found that any considerable quantity of animal manure, applied to land where wheat is sown, has a tendency to cause it to grow rapid, and of course the sap bursts out, and it rots, as we call it; and when this takes place the kernel becomes shrivelled, and is rendered nearly useless; and no human means can prevent it, if we enrich our land largely with animal manure. A previous clover crop ploughed in is enough to cause wheat to grow sufficiently large, unless we wish for straw instead of kernel. This cannot always conveniently be had when we wish to sow wheat. In such case it is desirable to place something on the soil which will cause it to grow, and not surfeit it. We learn that in Great Britain, nothing has succeeded so well as lime. The farmers there, within fifteen years, have by the proper use of lime been able to procure 30 or 40 per cent. more of the golden crop than formerly.—[Maine Farmer.]

ATTACK OF WILD ELEPHANTS ON A GRANARY.—A small body of seapoys stationed at an outpost to protect a granary, containing a large quantity of rice, was suddenly removed, in order to quiet some unruly villagers, a few miles distant, who had set the authorities at defiance. Two of our party happened to be on the spot at the moment. No sooner had the seapoys withdrawn, than a herd of wild elephants, which had long been noticed in the neighborhood, made their appearance in front of the granary. They had been preceded by a scout, which returned to the herd, and having no doubt satisfied them, in a language which to them needed no interpreter, that the coast was clear, they advanced at a brisk pace towards the building. When they arrived within a few yards of it, quite in martial order, they made a sudden stand, and began deliberately to reconnoitre the object of their attack. Nothing could be more wary and methodical than their proceedings. The walls of the granary were of solid brick work, very thick, and the only opening into the building was in the centre of the terraced roof, to which the ascent was by a ladder. On the approach of the elephants, the two astonished spectators clambered up into a lofty banyan tree, in order to escape mischief. The conduct of the four-footed besiegers was such as strongly to excite their curiosity, and they therefore watched their proceedings with intense anxiety. The two spectators were so completely screened by the foliage of the tree to which they had resorted for safety, that they could not be perceived by the elephants, though they could see very well, through the little vistas formed by the separated branches, what was going on below. Had there been a door in the granary, all difficulty in obtaining an entrance would have vanished; but four thick brick walls were obstacles which seemed at once to defy both the strength and sagacity of these dumb robbers. Nothing daunted by the magnitude of the difficulty which they had to surmount, they successively began their operations at the angles of the building. A large male elephant, with tusks of immense proportions, labored for some time to make an impression, but after a while his strength was exhausted and he retired. The next in size and strength then advanced, and exhausted his exertions with no better success. A third then came forward,

and applying those tremendous levers with which his jaws were armed, and which he wielded with such prodigious might, he at length succeeded in dislodging a brick. An opening once made, other elephants advanced, when an entrance was soon obtained sufficiently large to admit the determined marauders. As the whole herd could not be accommodated at once, they divided into small bodies of three or four. One of these entered, and when they had taken their fill they retired, and their places were immediately supplied by the next in waiting, until the whole herd, upwards of twenty in number, had made a full meal. By this time a shrill sound was heard from one of the elephants, which was readily understood, when those that were still in the building immediately rushed out and joined their companions. One of the first division, after retiring from the granary, had acted as sentinel while the rest were enjoying the fruits of their sagacity and perseverance. He had so stationed himself as to be enabled to observe the advance of an enemy from any quarter, and upon perceiving the troops as they returned from the village, he sounded the signal of retreat, when the whole herd, flourishing their trunks, moved rapidly into the jungle.—[Oriental Annual.

NEW-YORK AMERICAN.

MARCH 22—28, 1834.

LITERARY NOTICES.

No. XVIII.

Chicago, Jan. 10, 1834.

I have been here more than ten days, without fulfilling the promise given in my last. It has been so cold, indeed, as almost to render writing impracticable in a place so comfortless. The houses were built with such rapidity during the summer as to be mere shells; and the thermometer having ranged as low as 29 below zero during several days, it has been almost impossible, notwithstanding the large fires kept up by an attentive landlord, to prevent the ink from freezing while using it, and one's fingers become so numb in a very few moments when thus exercised, that, after vainly trying to write in gloves, I have thrown by my pen, and joined the group composed of all the household around the bar-room fire. This room, which is in an old log cabin aside of the main house, is one of the most comfortable places in town, and is, of course, much frequented, business being, so far as one can judge from the concourse that throng it, nearly at a stand still. Several persons have been severely frost-bitten in passing from door to door; and, not to mention the quantity of poultry and pigs that have been frozen, an ox, I was just told, has perished from cold in the streets at noonday. An occasional Indian, wrapped in his blanket, and dodging about from store to store after a dram of whiskey, or a muffled up Frenchman, driving furiously in his cariole on the river, are almost the only passengers abroad; while the wolves, driven in by the deep snows which preceded this severe weather, troop through the town after nightfall, and may be heard howling continually in the midst of it.

The situation of Chicago, on the edge of the Grand Prairie, with the whole expanse of Lake Michigan before it, gives the freezing winds from the Rocky Mountains prodigious effect, and renders a degree of temperature which, in sheltered situations, is but little felt, almost painful here.

The bleak winds
Do surely ruffle; for many a mile about,
There's scarce a bush.

The town lies upon a dead level, along the banks of a narrow forked river, and is spread over a wide extent of surface to the shores of the lake, while vessels of considerable draught of water can, by means of the river, unload in the centre of the place. I believe I have already mentioned, that four-fifths of the population have come in since last spring; the erection of new buildings during the

summer has been in the same proportion; and although a place of such mushroom growth can, of course, boast of but little solid improvement in the way of building, yet contracts have been made for the ensuing season, which must soon give Chicago much of that metropolitan appearance it is destined so promptly to assume. As a place of business, its situation at the central head of the Mississippi Valley will make it the New Orleans of the North, and its easy and close intercourse with the most flourishing Eastern cities, will give it the advantage, as its capital increases, of all their improvements in the mode of living.

There is one improvement to be made, however, in this section of country, which will greatly influence the permanent value of property in Chicago. I allude to a Canal from the head of Lake Michigan to the head of steam navigation on the Illinois, the route of which has been long since surveyed. The distance to be overcome is something like twelve miles; and when you remember that the head waters of the Illinois rise within eleven miles of Chicago river, and that a level plain of not more than eight feet elevation above the latter is the only intervening obstacle, you can conceive how easy it would be to drain Lake Michigan into the Mississippi by this route; boats of 18 tons having actually passed over the intervening prairie at high water. Lake Michigan which is several feet or more above Lake Erie, would afford such a never-failing body of water that it would keep steamboats afloat on the route in the driest season. St. Louis would then be brought comparatively near to New York, while two thirds of the Mississippi Valley would be supplied by this route immediately from the markets of the latter. This canal is the only remaining link wanting to complete the most stupendous chain of inland communication in the world. I had a long conversation this morning, on the subject, with Major H., the United States Engineer, who is engaged in superintending the construction of a pier at this place. He was polite enough to sketch the main features of the route with his pencil in such a manner as to make its feasibility very apparent. The canal would pass for the whole distance through a prairie country, where every production of the field and the garden can be raised with scarcely any toil, and where the most prolific soil in the world requires no other preparation for planting than passing the plough over its bosom. The most effectual mode of making this canal would be to give the lands along its banks to an incorporated company who should construct the work within a certain time. The matter is now merely agitated at elections as a political handle.

January 13.

I had got thus far in a letter to you, when several officers of the garrison, to whom I am indebted for much hospitable attention and many agreeable hours, stopped opposite the door with a train of carioles, in one of which I was offered a seat, to witness a pacing match on the ice. There were several ladies with gentlemen in attendance already on the river, all muffled up after the Canadian fashion in fur robes, whose gay trimmings presented a rich as well as most comfortable appearance. The horses, from which the most sport was expected, were a black poney bred in the country, and a tall roan nag from the lower Mississippi. They paced at the rate of a mile in something less than three minutes. I rode behind the winning horse one heat, and the velocity with which he made our cariole fly over the smooth ice, was almost startling. The southern horse won the race; but I was told that in nine cases out of ten, the nags from his part of the country, could not stand against a French poney. In the middle of the chase, a wolf, probably roused by the sleigh-bells from his lair on the river's bank, trotted along the prairie above, within gun shot, calmly surveying the sport. The uninvited presence of this long-haired amateur at once suggested a hunt for the morrow, and arrangements were accordingly made, by the several gentlemen present, for that most exciting of sports, a wolf chase on horseback. I was not present at the assembling of the hunt; and the first intimation I had of the game being afoot, was from hearing the cry of hounds and the shouting of a party of horsemen, as they clattered along the frozen river, with two prairie wolves and one gray wolf, running at full speed, about a pistol shot ahead of them. One wolf was killed; and another had made his escape before I joined the party. But the third, the gray wolf, which had struck off into the prairie, was still fresh, when I came into the hunt with an untired horse. But one of the hunters had been able to keep up with him, and him I could distinguish a mile off in the prairie, turning and winding his

foaming horse as the wolf would double every moment upon his tracks, while a half a dozen dogs, embarrassed in the deep snow, were slowly coming up. I reached the spot just as the wolf first stood at bay. His bristling back, glaring eyes, and ferociously distended jaws, might have appalled the dogs for a moment, when an impetuous gray-hound, who had been for sometime pushing through the snow-drifts with unabated industry, having now attained a comparatively clear spot of ground, leaped with such force against the flank of the wolf as to upset him in an instant, while the greyhound shot far ahead of the quarry. He recovered himself like lightning, but not before a fierce, powerful hound, whose thick neck and broad muzzle indicated a cross of the bull-dog blood with that of a greyhound strain, had struck him first upon the haunch, and was now trying to grapple him by the throat. Down again he went, rolling over and over again in the deep snow, while the clicking of his jaws, as he gnawed eagerly at each member of the pack that by turns beset him, was distinctly audible. The powerful dog already mentioned secured him at last, by fixing his muzzle deeply into the breast of the prostrate animal. This however did not prevent the wolf giving some fearful wounds to the other dogs which beset him; and accordingly, with the permission of the gentleman who led the chase, I threw myself from my horse and gave the game the coup de grace with a dirk-knife which I carried about me. The success of this hunt induced us, upon the spot, to appoint another for to-day.

It was a fine bracing morning, with the sun shining cheerily through the still cold atmosphere far over the snow-covered prairie, when the party assembled in front of my lodgings to the number of ten horsemen, all well mounted and eager for the sport. The hunt was divided into two squads; one of which was to follow the windings of the river on the ice, and the other to make a circuit on the prairie. A pack of dogs, consisting of a gray hound or two for running the game, with several of a heavier and fiercer breed for pulling it down, accompanied each party. I was attached to that which took the river; and it was a beautiful sight, as our friends trotted off in the prairie, to see their different colored capotes and gaily equipped horses contrasted with the bright carpet of spotless white over which they rode, while the sound of their voices was soon lost to our ears, as we descended to the channel of the river, and their lessening figures were hid from our view by the low brush which in some places skirted its banks. The brisk trot into which we now broke, brought us rapidly to the place of meeting; where, to the disappointment of each party, it was found that neither had started any game. We now spread ourselves into a broad line, about gunshot apart from each other, and began thus advancing into the prairie. We had not swept it thus more than a mile, when a shout on the extreme right, with the accelerated pace of the two furthestmost riders in that direction, told that they had roused a wolf. "The devil take the hindermost," was now the motto of the company, and each one spurred for the spot with all eagerness. Unhappily, however, the land along the bank of the river, on the right, was so broken by ravines, choked up with snow, that it was impossible for us who were a half a mile from the chase when started, to come up at all with the two or three horsemen who led the pursuit. Our horses sunk to their cruppers in the deep snow drift. Some were repeatedly thrown; and one or two breaking their saddle girths, from the prodigious struggle their horses made in the snow-banks, were compelled to abandon the chase entirely. My stout roan carried me bravely through all; but when I emerged from the last ravine on to the open plain, the two horsemen who led the chase, from some inequality in the surface of the prairie, were not visible; while the third, a fleet rider, whose tall figure and Indian head-dress had hitherto guided me in the chase, had been just unhorsed, and abandoning the game afoot, was now wheeling off apparently with some other object in view. Following on the same course, we soon encountered a couple of officers in a train, who were just coming from a mission of charity, visiting the half-starved orphans of a poor woman, who was frozen to death on the prairie, a day or two since—the wolves having already picked her bones before her fate became known. One by one, our whole party collected around to make their inquiries about the poor children, and the two fortunate hunters soon after joined us with a large prairie wolf hanging to the saddle bow of one of them.

It was now about eleven o'clock; we were only twelve miles from Chicago; and though we had kept up a pretty round pace considering the depth of the

snow, in coursing backward and forward since eight, our horses generally were yet in good condition, and we scattered once more over the prairie with the hope of rousing more game. Not ten minutes elapsed before a wolf, breaking from the dead weeds which shooting eight or ten feet above the level of the snow indicated the banks of a deep ravine, dashed off into the prairie pursued by a horseman on the right. He made instantly for the deep banks of the river, one of whose windings was within a few hundred yards. He had a bold rider behind him, however, in the gentleman who led the chase, (a young educated half blood, of prepossessing manners, and well connected at Chicago.) The precipitous bank of the stream did not retard this hunter for a moment, but dashing down to the bed of the river, he was hard upon the wolf before he could ascend the elevation on the opposite side. Four of us only reached the open prairie beyond in time to take part in the chase. Nothing could be more beautiful. There was not an obstacle to oppose us in the open plain; and all our dogs having long since given out, nothing remained but to drive the wolf to death on horseback. Away, then, we went, shouting on his track; the hotly pursued beast gaining on us whenever the crust of a deep snow drift gave him an advantage over the horse, and we in our turn nearly riding over him when he came to ground comparatively bare. The sagacious animal became at last aware that his course was soon up at this rate, and turning rapidly in his tracks as we were scattered over the prairie, he passed through our line and made at once again for the river. He was cut off, and turned in a moment, by a horseman on the left, who happened to be a little behind the rest; and now came the keenest part of the sport. The wolf would double every moment upon his tracks, while each horseman in succession would make a dash at, and turn, him in a different direction. Twice I was near enough to strike him with a horse-whip; and once he was under my horses feet, while so furiously did each rider push at him, that as we brushed by each other and confronted horse to horse, while riding from different quarters at full speed, it required one somewhat used—"to turn and wind a fiery Pegasus"—to maintain his seat at all. The racial, who would now and then look over his shoulders and gnash his teeth, seemed at last as if he was about to succumb—when, after running a few hundred yards in an oblique direction from the river, he suddenly veered his course at a moment when every one thought his strength was spent; and, gaining the bank before he could be turned, he disappeared below it in an instant. The rider nearest to his heels became entangled in the low boughs of a tree, which grew near the spot; while I, who followed next, was thrown out sufficiently to give the wolf time to get out of view, by my horse belting as he reached the sudden edge of the river. The rest of the hunt were consequently at fault when they came up to us; and, after trying in vain to track our lost quarry over the smooth ice for half an hour, we were most vexatiously compelled to abandon the pursuit as fruitless, and return to the village with only one scalp as the reward of our mornings labors.

It was with no envious feelings, I assure you, that, on making my arrangements an hour ago to start in the new line of stages which has just been established between this point and St. Louis, I found myself compelled to part with the friend to whom I was chiefly indebted for my share in the glorious sports I have just attempted to describe to you—the four-footed companion of my last six weeks rambles. I remember being once struck with the remark of an ingenious writer, in the Library of Useful Knowledge, when, in discussing the real and the relative value of horses, he observes that, the commonest hackney, if in every respect suiting his owner, is priceless to the possessor. A favorite horse in fact, though his estimation may only depend upon the whim of his master, is one of this world's goods which, like first-love and lost confidence, the Alexandrian M. S. S. and a perfectly fitting coat, can never be thoroughly replaced. It is not, however, when the charge of such property falls exclusively to grooms and others from one end of the year to another, that you feel its value. The stall-fed palfrey which you drive along a turnpike from one hotel to another, and abandon when he falls sick for some other means of conveyance, with as little concern as you would exchange your trunk for a portmanteau, or vice versa, has but little hold on one's feelings in comparison with the hearty animal with which you wander away, where he meets with no care but such as you bestow upon him; and when you in turn become wholly dependent upon him for overcoming distances and difficulties, between places so remote from each other, that not only your comfort but sometimes your personal safety depend upon ac-

complishing the intervals within certain periods—when you push ahead through falling sleet, ford rivers, plunge through snow banks, or cross morasses, where the matted grass spreading its carpet over the shaking slough, embarrasses and wearies the step of your sagacious quadruped while it prevents his feet from sinking into the dangerous quagmire beneath. Those weeks of such intercourse between man and brute, are like those rainy days when one is shut up in a country house with strangers. They cherish a fellowship more cordial than years of ordinary intercourse could engender. It is no little consolation to me that I leave my Bucephalus in excellent hands; nor does this necessary separation so engross my sympathies that I have none to spare for other partings. Upon these, however, I shall not dilate here, though you must not be surprised to find me returning more than once hereafter to characters, scenes and incidents at Chicago, which I have hitherto left untouched. H.

THE PINK TIPPET, JESSAMIE COTTAGE, THE SIMPLE FLOWER, ELLEN'S VISIT. New York, Protestant Episcopal Press.—These are little tracts issued by the Protestant Episcopal Sunday School Union, of which the first named is among the earliest and best in composition, but much inferior to the succeeding ones in its paper and typography. The later ones are, altogether, very creditably got up.

ANGELL'S SERIES OF SCHOOL BOOKS.—We noticed some weeks ago with approbation, founded on our examination rather of the reading than the elementary portions of the work, this series of school books. A teacher who upon the strength of our remarks purchased the series, asks room to express his dissent from our opinion of these books, and to lay his reasons for that dissent before the public. We cannot refuse a request so reasonable, and so well sustained by evidence. We insert below his first number:—

ANGELL'S SERIES OF SCHOOL BOOKS.—Mr. Editor.—The importance of correct elementary books cannot be too highly appreciated. The habits which we acquire in our childhood seem to be so interwoven with our very nature, that, even though we discover them to be erroneous, we find it exceedingly difficult to correct them. The infant mind has been aptly compared to a sheet of white paper, which receives an impression from the slightest touch of the pen, but from which a wrong mark or a blot can never be erased, and leave it fair and smooth for a second impression. Hence it is that we see many well educated men, in the constant practice of spelling and pronunciation which they themselves actually believe to be erroneous.

I have been engaged in teaching for many years, during which time I have examined a great variety of books intended for the instruction of children in the rudiments of orthography and pronunciation. Having seen in the American a favorable notice of Mr. Angell's Series of Books, and being anxious to benefit the children under my tuition by the introduction of every thing that is in truth an improvement, I purchased a set of these books, and have given them quite a careful examination; and I regret exceedingly that my opinion of their merits is at variance with yours; but, Sir, knowing your liberality, I have written my objections briefly, and request an insertion of them in your paper.

Mr. Angell has attempted to form a continuous or collateral series of spelling and reading lessons.—Each spelling lesson is composed of words selected from the reading lesson immediately following it; and these words are thrown together in the spelling lessons without any regard to the greater ease with which one may be spelled than another, or the natural advancement of the scholar, the first three numbers containing as great or a greater proportion of difficult words than the last three. The words are also repeated very uselessly in the different lessons, while other words contained in the reading lessons, a knowledge of which is of the same importance to the scholar, are not in any of the spelling lessons, consequently, the child will never know any thing of their orthography from the perusal of them.

The orthography of these books is in my opinion very objectionable; for, in them, Mr. Angell has not followed the spelling of any standard dictionary, but has sometimes adopted that of Johnson and Walker, sometimes that of Webster, and has frequently spelled words at variance with all of them. In proof of this I will cite a few of the almost num-

berless instances which occur in the different volumes. No 5. page 12, *ensure* with *en*, agreeably to Walker, 208, *insurance*, with *in* agreeably to Webster; 207, *buffeting*, contrary to both; No. 2. 90, *behavior*, 3, 37, *honor*, 55, *parlor*, 4, 213 *labor*, 5, 271, *candor*, &c., without *u* agreeably to Webster; and No. 5, 200 *Saviour*, 261 *ermour*, 188 *rumour*, 2, 86 *colour*, with *u* agreeably to Walker; and 2, 24 *entrusted*, 80 *poney*, 2, 90 *threshing*, 4, 244 *cozzen*, 5, 122 *rein-deer*, 274 *paralyzed*, &c. &c., contrary to Walker and Webster; in none of the volumes is there either uniformity or consistency in the spelling. Not wishing to extend this communication unreasonably, I propose to send you another article in which I will treat of Mr. Angell's want of a system of pronunciation, and of his erroneous and contradictory division of words. AN OLD SCHOOLMASTER.

SUMMARY.

We inserted yesterday, on the authority of a gentleman of the Bar, a short statement of points ruled by the Supreme Court in the case of *Wheaton vs. Peters*. Another gentleman of the Bar informs us that that notice was not exact, and furnishes the following statement.—[National Intelligencer.]

The account of the points decided in the case of *Wheaton against Peters*, contained in the Intelligencer of yesterday is inexact, both in stating that the Court had ruled "every point of law in the case in favor of the appellee, Mr. Peters," and in omitting to state the most important principle of the law of copyright, which was actually settled in the case.

To begin with the omission:

1. The Court has unanimously determined (to use the words of the opinion delivered by Judge McLean) "that no Reporter has, or can have any copyright in the written opinions delivered by this Court, and that the Judges thereof cannot confer on any Reporter 'any such right.'"

2. The Court has not decided that the publication of Mr. Peters' *Condensed Reports* is not an infringement of Mr. Wheaton's copyright in the 12 volumes of *Wheaton's Reports*, so far as respects the general order and arrangement of his book; the oral opinions delivered by the Judges from the Bench, and taken down by Mr. W. in writing; the marginal notes, or abstracts of the points decided; the statements of facts in each case, abridged by Mr. W. from the records; and the analytical indexes to each volume, which Mr. W. claims as author, and which Mr. P. has copied from Mr. W.'s book.

3. The Court has made no final disposition of the cause, but has remanded it to the Court below, with directions to ascertain, by a jury, the facts in dispute between the parties.

The Supreme Court have given judgment in favor of Rowland Stevenson, impleaded with Romington and others, at the suit of James W. Parkins, consequently the bail of Stevenson for the jail liberties, is discharged; and after four months' confinement in jail and about three months on the limits, Stevenson is once more at large.—*Courier*.

APPOINTMENTS, FEB. 19.

Kings—Peter Conover, Wm. R. Dean, Hugh Farrell, Asbury W. Kirk and Harmanus H. Borkaloo, auctioneers. Abraham S. Wright and R. M. Whiting, inspectors of lumber. John Pierce notary public. Joseph Herbert, inspector of sole leather.—States Dorson, inspector of Beef and pork. John Lott, jr. judge of the municipal court for the village Brooklyn.

New York—Peter H. Ryckman, culler of slaves and heading.

We learn that on Saturday night last, a disturbance, which resulted in a serious riot, broke out among the students of the University. The dwelling of the President was attacked, the windows of the Professors broken in, and several fire-arms discharged. We did not learn that personal injury was sustained by any of the parties, nor does our informant know the particular cause of the disturbance, or in what manner it was quelled. We wait with anxiety for the particulars of this disgraceful affair, which will be doubtless furnished by our next advices from Tuscaloosa.—[Mobile Register, 6th March.]

Several lighters have come up from the brig Buenos Ayres, with sugar and rum, to Dr. Rogers & Son. The brig will probably be got off. A gentleman who arrived in town last evening, informs that he left the vessel at 3 P. M. yesterday—that they had put on board of lighters about 80 hhds. of sugar, and 12 puncheons of rum—Four lighters were left along side, sufficient to take in the residue of the cargo; and the brig, it is probable, will get off this morning.

Old Ironsides.—We understand from a source entitled to confidence, that the Board of Navy Commissioners have issued orders that the old *bead*, which is a perfectly plain one, be replaced on the Constitution, and that her stern be also finished in a plain manner. For the honor of that noble ship, we hope the figure head, in regard to which much just indignation has been manifested, will be dispensed with. It will be in time to ornament our vessels with the busts of any man, when History shall have established his character, and pronounced him worthy of such honor.

The Rev. Dr. DUCACHET, of Norfolk, Virginia, has received a unanimous call to the Restorship of St. Paul's, Philadelphia.

IMPORTANT.—The Baltimore American of yesterday morning has this formidable announcement:

The following notice was handed for insertion by the Cashier of the Bank of Maryland, last night, when this paper was about going to press:—

TO THE PUBLIC.

Bank of Maryland, }
24th March, 1834. }

The Board of Directors of this Institution have ascertained with surprise and deep regret, equal to any that the community will feel, that this institution is unable to proceed with its business, and they have resolved to transfer all its effects to a Trustee, for the equal benefit of the creditors of the Bank.

The Board of Directors hope and trust that the assets will be sufficient to discharge the debts of the institution, and their determination to stop its business at once, is from a conviction that to continue it longer would only be attended with loss to the community. Their advice to the creditors, founded upon the best judgment they are able to form, is, not to sacrifice their claims. The debtors of the institution will have the privilege of paying their debts with the notes and certificates of deposit and the open accounts due by the Bank, and these alone they hope will enable the note holders and depositors speedily to realize nearly all, if not the entire amount of their credits.

By order, R. WILSON, Cashier.

Letters from Baltimore, received this morning, state that on the failure of the Maryland Bank, the whole town was in an uproar; all classes of people in motion and commotion; a run on all the Banks; such a day of excitement, one writer says, he never witnessed before. The stockholders in the Maryland Bank, will, it is said, lose all. The following facts are stated in one of the letters—our readers will make their own comments on the use thus made of the public monies.

"This Bank has been circulating vast numbers of its notes in the West; last week a draft from the West for \$150,000 was presented through the Branch Bank—the President Poulteny asked one day. It was granted—an express was sent to Mr. Secretary Taney, who drew on the Branch for \$200,000, thus the draft on the Maryland Bank was paid, and the other \$50,000 were deposited in the Pet Bank, the Union, which has done every thing in its power to sustain Poulteny's Bank, but all in vain, though aided by the Government in the sum of \$150,000."

THE BANK OF MARYLAND.—The failure of this bank, and the alleged aid extended to it by the Secretary of the Treasury, are already, it will be seen, under the consideration of the Senate of the United States. Meantime the President of this bank thus honorably meets the case of possible loss to holders of its notes by a pledge of his whole fortune:—

My confident opinion is that the Bank is able to pay all its obligations, but to obviate any difficulty whatever, and to satisfy the holders of the notes and the special certificates of the Bank, I hereby pledge my whole private estate, whether real, personal, or mixed, to redeem any deficiency that the means of the Bank may, by any possibility, be unable to redeem.

EVAN POULTNEY.

March 25, 1834.

Fire.—We are informed, (says the Albany Evening Journal of yesterday,) that upwards of 20 buildings were destroyed by fire last evening in Troy. All the buildings from River st. to Starbuck & Son's street, were consumed.

Steam Boat Napoleon.—The St. Louis Republican announces the total loss of the steam boat Napoleon,

from Pittsburg for that port, heavily freighted with dry goods, &c. The boat struck a snag in the Mississippi, about twelve miles above the mouth of the Ohio. The snag passed through the bow end up to the hurricane deck, without breaking off. In this situation, by the aid of a keel boat which she had in tow, and of a steam boat, about twenty tons of the freight were got out uninjured. A great portion of the remainder will be lost, as the boat had sunk about twenty feet, and the depth of water is represented to be thirty or forty feet. Most of the goods, it is believed, were insured, principally at Eastern offices—but in one or two cases heavy loss has been sustained by the owners.

The *Canadian Giant*, well known as having exhibited himself in several countries of Europe and America, died at St. Jean des Chailons, about 30 miles above Quebec, on the 28th ult. His name was Modeste Malhot. His height was six feet four inches, and his weight 619 1/2 lbs. The coffin in which he was interred was three feet wide, and two feet and a half deep.

LANDS SOLD FOR TAXES.—The Argus of yesterday says the sales of Monday did not go through the county of Alleghany. Next day the residue of Alleghany was gone through with, and Broome would follow.

THE SUPREME COURT OF THE UNITED STATES adjourned on Wednesday, 19th, after a session of sixty-six days, and having disposed of every case ready for trial. It decided 79 cases and left 41 on the docket.

Melancholy Accident.—On the evening of the 9th instant, (says the New Orleans Advertiser, of the 11th inst.) when some gentlemen were amusing themselves shooting with pistols at the Lake, an inexperienced young man took in his hand a hair trigger pistol, and when in the act of preparing to shoot he touched the trigger—the pistol went off, and the ball passed through the body of Mr. B. B. Butler, a highly respectable gentleman, entering at the point of the third rib, and passing out at the side of the spine. He died of hemorrhage in a few hours after the accident.

The Key West Sentinel, of the 20th ult., contains the decree of Judge Webb, awarding fifteen per cent. salvage to the libellants of the ship Hector and cargo, stranded on the Florida Reef, on her voyage from New York to Mobile. The value of the ship and cargo was estimated at \$70,000.

Alexandria Market.—Flour has improved. Sales were made from stores on Monday at \$4 20 to \$4 25.

FOREIGN INTELLIGENCE.

GILBERT STEWART NEWTON.—It is with the greatest satisfaction we find in the London Courier the following contradiction of the paragraph from the Literary Gazette, published by us yesterday:

There is no foundation for the statement in the Literary Gazette of the death of Mr. G. S. Newton, the Royal Academician. That gentleman has been seriously indisposed, but was considerably better yesterday.—[Courier.]

FROM GIBRALTAR we have, by the favor of Mr. Regalley, of Boston, a passenger in the brig *Montano*, papers to 18th ult., furnishing Madrid dates of the 11th. There is nothing however of importance.

LATE AND IMPORTANT FROM SPAIN—DIRECT.—We are again indebted to Ex-Governor Cabrera for extracts from his private letters down to the 11th Feb. from Cadiz, received by the *Ganges*, at Boston. These tidings are considerably later from Madrid, and also later from Lisbon than the advices received via England; by which it appears that Don Pedro had gained important advantages over Don Miguel.

From Private Letters, dated

CADIZ, 11th Feb. 1834.

By the British man-of-war *Stag*, arrived at our port from Lisbon, we have received letters and newspapers from that capital, as late as the 3d inst. by which we find that three important victories have lately been obtained by the troops of Don Pedro against his opposers. In the afternoon of the 21st January last, in the environs of Pernes, the troops of Don Miguel, four thousand in number, attacked General Saldanha, who repelled them with such vigor and bravery that the whole of the Miguelites were entirely defeated, leaving in the hands of Saldanha more than one thousand prisoners, among them nearly a whole battalion of the

7th regiment, seven pieces of artillery and some banners. Mean while the Duke of Terceira (Villa Flor) was also attacked by another division of Miguelites, in the position of the bridge of Aseca, where the latter were equally defeated, with an immense loss.—Then the Duke sent in the direction of Villada a body of cavalry to punish 700 enemies who had passed the river Tagus from the South to the North side. All this force was entirely cut to pieces and annihilated; the few that escaped from the bayonets of the Pedroites, precipitated themselves into the river, where they were drowned. The Miguelite army, routed on every point, may now be considered as lost; the relics will soon be extinct.

SPAIN.—In Spain, the partisans of Don Carlos, the Pretender, increase every day in Biscay and Navarre, where the Queen has sent a force of 30,000 men. A decree has been issued by the Queen ordering that the rebels taken with arms should be put to death if they are officers, and condemned to hard labor or transportation to Cuba, Porto Rico, or Philippine Islands if they are sergeants, corporals, or private soldiers.

The principal labor that now occupies the whole attention of the Government is the mode of convoking the Cortes or General Assembly of the Nation. The liberals enlist themselves in the ranks of the National Militia everywhere. The province of Catalonia alone has actually 30,000. They are all in expectation of the mode in which the Cortes are to be convoked, and that mode is to decide their conduct. Meanwhile, they resting on their arms, they are indignant at the past, smile at the present, and rejoice at the future. The most striking feature of the present state of the affairs in Spain is, that France and England are endeavoring to repress the general expansion of liberty, while the Captains General of the army, who had been the principal supporters of the dead tyranny, are now at the head of the liberal party.

MISCELLANY.

Laconic Epistles.—There was a celebrated diplomatist, whose time, at one period of his life, was so engaged in matters of political importance, that he could scarcely find a moment to attend to social duties, and a certain facetious colleague used to say that he never dotted his i's or crossed his t's for the purpose of saving time. It is not, therefore, probable that such a man would fritter away his precious existence in writing letters to friends upon subjects unconnected with ambition and party intrigues. He however, broke through this determination, in the following instance. A lady, with whom he was well acquainted, married a young French nobleman, the choice of her heart. Scarcely had the honeymoon passed away, when the husband was attacked with a severe illness, and died. The diplomatist being informed that the affliction of the lady was so intense, that night and day she did nothing but weep—that sorrow would soon bring her to the grave—deemed it an imperative duty to write a letter of condolence. This he performed—but, reflecting that true grief is always laconic, and wishing her to understand how alive his feelings were to the irreparable loss she had sustained, he wrote these words—and they formed the whole contents of the condoling letter: "Ah! Madame!"—Six months passed away, and grief and sorrow passed also away with the fleeting months. The fair lady followed the example of the Dame of Ephesus, and took to herself another husband. No sooner had the writer of protocols heard, this news, than he evinced more than usual alacrity in coming to the conclusion of writing a congratulatory epistle, which was accordingly despatched. He again reflected, that if grief be not loquacious, joy is also laconic—and so he wrote, "Ho! ho! Madame!"

BACKGAMMON—versus CHESS.

I am just come away from a terrible dispute with cousin Kate on the relative merits of backgammon; and to hear us at our argument you would think Bedlam was broke loose outright. I say our argument, because I am a gallant fellow: though, to put modesty on the shelf for once, the ratiocination is pretty nearly all on one side—mine, of course.—Yet, I don't know how it is, I can never bring Kate to my way of thinking—nay, she has not unfrequently the assurance to say that I am the vanquished party. Women are certainly the worst of arguers in the world; they never know when they are beaten. You may assail them with logic, you may batter them with syllogisms—what care they? You think you have got them fairly into a *reductio ad absurdum*—you have driven them to Point Nonplus—you have left them with not so much as a leg to stand upon—and straightway they take up their old position just as if nothing had happened. That's always the way

with Kate, at least. When I have outwangled her till I am nearly black in the face, and she is reduced to a positive nonentity, calmly she spreads out her wings, like a regenerated phoenix (excuse the stale-ness of the simile!) and from those cinders of argumentation, raises up in all the pride of unruffled plumage. This puts me in a pet—well it may, indeed!—and then we get to “high words,” and then Kate laughs; and then I bounce out of the room; and, running to this little den of mine, set to to vindicate myself in an essay.

That's the best way of disputing, after all—the pleasantest, at any rate. You can then give your arguments fair play. If there is a weak point in your adversary's reasoning, what fine tearing work you can make of it! And if a tough objection comes in your way, how easy to misunderstand it, or skip it over altogether! Commend me to your pen argument, there is none to compare with it. It is like a grand field-day and review, where the troops are all on one side: or, if you are obliged, for candor's sake, to give yourself a few heavy lunges, no fear but you will find means to parry them—like the cat in the kitchen, you need not care being tossed head over heels a little, for there is no danger but you will come down on your legs again.

How any one can like chess moves my especial wonder. It is the dullest, the puzzlingest, and the tediousdest game under the sun. There they sit, Kate and James, posing and prosing over those horses' heads and fools' caps hour after hour, night after night. They speak but once or twice in an evening, and then only monosyllabically, “Check!”—and it seems as if a chair or a table had been suddenly endowed with speech. They can't talk themselves, and they can't be talked to. You cannot ask the civillest question but they give you a sulky answer—if, indeed, they condescend to give you an answer at all. They call it *playing at chess*: monstrous perversion:—to me it seems harder work than algebra. It is the most lack lustrous of all games—it is no game at all, in fact—it is a labor, and a labor too, the most irksome that can well be imagined. It is like those “instructional games” invented for children, where they are required to twirl the tee-totum and ascertain the height of John Chinaman in a breath; where the drawing of a card or the throwing of a die leads you to the depth of the Mediterranean or the longitude of Pernambuco. Poor dear children! who could have so miserably mistaken the nature of the play—who could have forged such fetters for their souls! But, bless them, they despised the cheat—they spurned the starved snake—they tore the false sheet into ten thousand tatters—they shivered the tee-totum into ten thousand fragments! But look at the chess-players, motionless as a brace of mummies! And yet they describe their game as “very exciting.” Ha! ha! only observe their faces—not a curl of the lip, not a twinkle of the eye—they have not mustered so much as a smile betwixt 'em this half hour! Once or twice, indeed, they have been “excited” to a most portentous frown; and something very like a half-suppressed “damn it!” has every now and then been heard on James's side of the board. They tell you it is the game of kings—war in miniature. If kings like it, well and good; one seldom hears of them playing at it. I have been a constant reader of the daily papers this—no matter how many years; I have read of his Majesty taking an airing in the Park, playing a quiet rubber at whist, sailing on Virginia Water, and going to look at the harriers at the Devil's Dyke; but I never heard of the king playing chess. As for its being an image of war (no great credit by-the-by,) so is backgammon—so is cribbage—so is fox-and-goose. Query:—do kings ever play at fox-and-goose?

I have mentioned backgammon. Yes, backgammon is a game. What life—what spirit—what merriment—what variety! Rattle, rattle, rattle, go the dice—bang sixes! Brave! take you up—cover my own blot—take you up again, and complete the last point in my own table. Ha, ha! if that is not enough to make any one die with laughing, what is? Throw again—six and three—obliged to leave a blot—four—four, by Jove, you take me—there again—up I go, two men must headed in a moment, and my adversary grinning from ear to ear. Ha, ha, ha!

That's what I like in backgammon. The reverses are so sudden—the ups and downs are as quick as in running hand. You have not time to brood over your ill luck, and your enjoyment is the keener for the shortness of your triumph. It is like a game at fistfence, where you shake hands with your antagonist before you set to, and pledge his health in a bumper when all is over. The other is far more vicious—downright French and English—war to the knife—through “good landing.” In backgammon, you

have not time to be angry; in chess, ill blood must needs grow from so long brooding. I would not willingly walk out in the dark with a man whom I had beaten at chess. You may believe it or not, as you like; but I once knew a young fellow who lost his mistress and forty thousand pounds by indiscreetly taking her queen with one of his pawns; and my uncle, who is as fond of backgammon as I am, assures me that he has heard of a person who, having been stale mated when on the point of winning a long contested game, took it so much to heart that he cut his carotid artery three weeks after. For my part, I never could properly understand chess—it is such in-and-out, three-cornered work. The rooks, bishops, and pawns, I could manage well enough; but those horrid horses' heads, they always perplexed me. And then that *castling the king*, I never could remember, from one time to another how it was done; and never saw the use of it when it was done. Most people, I believe, play at chess because they think it fine to do so; young ladies, because they fancy it argues a masculine mind—young men, because it hides their stupidity—retired tallow-chandlers, because they think it genteel. I was once fool enough to be dazzled by the glitter of the red and white, studied Philidor, and went to see the automaton. But the fit was not of long duration—I soon cut my wisdom-teeth—I soon returned to dear old backgammon; and I wish, reader, you and I could have a hit together at this moment. I can never tire of backgammon. It is like “Sweet Home,” (the song, I mean,) you cannot have too much of it; the appetite here “grows by what it feeds on,” (really our quotations and similes are shockingly antique;) it is like bread and cheese, of which it is said, the more you eat the hungrier you get. It unwearies the mind, and rectifies the spirits. It turns a Nero into an Augustus, and a Cymon into a Cæsar. The very sight of a backgammon-board is enough to put me into good humor. Those stripes of crimson and grey, how pleasant they be, like the glowing clouds of a summer sunset, or the brilliant ceruseations of the Aurora Borealis! How different the arena of the chess war! It always puts me in mind of the symbol on an alehouse window. It deserves no better than to be played on a shutter.

Backgammon is essentially a gay game. It is not to be played with solemn thoughts and sour faces. You ought to laugh every time you throw, and if you have not a jest ready for every “doublets,” you don't deserve to throw doublets again as long as you live. As backgammon is a game almost entirely of chance, it will scarcely be in good taste to make such stand upon your skill. Less is it to be endured that you should be constantly referring to Hoyle, for the maintenance of some vexatious rule or foolish courtesy. If a man stand shilly-shallying over a blot, or hesitates to take one of your men, for fear of consequences, beware how you lend him your money, or entrust him with the title deeds of your house! If a man insults you by pedantically quoting and resolutely maintaining antiquated laws, such as “If you touch a man you must move it, and if you relinquish it you cannot recall it,” shut the board in his face, ring for your slippers, and go to bed. I was once called in to bail a fellow with whom I had long been on terms of intimacy. We played a game or two at backgammon in the spunging house. I threw six times, one on one side of the board, one on the other. He protested it was against the rules of the game, and insisted on my throwing again. I took up my hat, left the room, suffered my friend to go to prison. Did I not serve him rightly?

The only objection I ever heard against backgammon was its want of sociality, only two can play at it. This is the objection of my very good friends, the whist players. But I don't consider it an objection: far from it—it is an advantage. There is seldom more than one person in a company that you are to concern yourself about; a friend, perhaps, or a sweetheart. If a friend, how delightful an opportunity it affords you for a *tête à tête*! You go on playing and joking, rattling the dice, and squibbing off puns, as pleasantly as sunshine in a hayfield. The game no more interrupts your thoughts than a gale interrupts the serenity of the deeps. It is to your discourse what the accompaniment is to a song: it is as animating as a trumpet is to a war-horse, or a view-hollo to a fox hunter, or a pair of bagpipes to a Scotchman. In the case of a sweetheart, the game is positively invaluable. To the lady herself, what opportunities it affords for the display of a well turned arm; how daintily her little fingers curved about among the men; how brilliantly glance her bright eyes, smiling over some lucky throw! And to you a *fete champêtre*, or a fancy ball, gives not half the facilitation. I never was in love but once in

my life, and then I used to pay my addresses through the medium of the backgammon board. Oh! Mary Rose W——! (Mrs. Jacob Jenkinson now,) Oh! Mary Rose! (Rosemary I used to call you in our more playful moments,) what billings and cooings have we had over that mock “History of England” of your old aunt's? What tender things have we said under cover of the dice-box! what sighs have we mingled with the rattling of the men! how very close have we brought our lips (all but kissing) under pretence of disputing about a throw, or ascertaining the length of a six-and-five! How often, too, when your poor aunt has looked up from the “Whole Duty of Man,” and seen us leaving blot after blot, and throwing helter-skelter, and playing into the wrong table, and taking up our own men instead of our adversary's—how often has she started us with her old favorite exclamation, “Hey day! now now?” and how have you blushed, Mary, at being convicted of a sigh or an ogle! and how have I stammered out an excuse for my fingers, which were haply caught playing themselves amongst your jetty ringlets, or for my toe, which was making love to your toe under the little rosewood table! Oh! Mary, Mary! those were happy days! my heart and your heart, Mary——. But, as I said before, you are Mrs. Jacob Jenkinson now, and I mustn't say a word of tenderness in your maternally ear, lest that stockbroking husband of your's should take it into his head to sue for damages. Oh! Mary, Mary, how could you think of marrying into the 3 per cent. Consols,—to be dinned to death with the slang of Capel-court,—to give birth to nothing but bulls and bears?

I have known a game of chess to last two, three or even four evenings. That seems bad enough; but what must one think when it comes to be spun out for as many months,—to be played through the medium of the General Post Office, and hundreds of miles intervene betwixt each move? Madness, madness! I was once challenged to play a game through the Two-penny, but I declined with indignation. The challenger showed me a letter he had that morning received from an adversary in Edinburgh, and he expected another, he said, by the next vessel from India. The Edinburgh letter ran thus: “Dear Phil,—By moving pawn No. 4 one square forward, you will very much oblige.—Dear Phil, your's very sincerely.—John Johnstone.” This fact alone is, in my mind, enough to damn chess.—What affectation! what folly! Did any one ever hear of a game of backgammon being played after such foolish fashion? Never, I'll be bound for it. Then, the airs of superiority the chessites assume over us poor backgammonists, and utter contempt they profess for our game! Why, the fact is, that our game is as superior to their's as silver to saw-dust. In chess two players must either be equal or unequal. If equal, they see through each other's manoeuvres in a minute; and the game (if not prolonged till both parties are heartily sick of each other, and so dropped from mere weariness) is lost at last by an oversight,—the loser not considering himself beaten.—If unequal, a certain number of moves places the weaker party *hors de combat*, and that as often as the game may happen to be renewed.

In backgammon nothing of this sort takes place.—The most practised player may be beaten by the veriest tyro. Old grandpapa may be gammoned by his little curly-headed granddaughter. Luck's all. Fortune governs throughout: conjecture is positively dumbfounded. A chancery suit or an action for libel can scarcely be more uncertain in its results. At backgammon all men are fatalists. Many fine moral lessons are contained in its leafless book. The “Talmud” and the “Koran” are not more full of ethical instruction than those two volumes of anti-types. They teach us how vain are all our calculations of the future—how foolish it is for man to trust to his own predictions in matters over which himself has no control. They counsel us to look with suspicion on present good fortune, yet never to despair in the midst of adversity. Let no man be puffed up with pride; his pride may have a fall; let no man despond at the presence of poverty; he may throw sixes! Backgammon instils into our minds the rudiments of honorable competition: of course, it is no game for the St. Simonians; it teaches us that all mankind are equal,—black and white. It is a microcosm, in which the men represent the brute matter, and the dice the informing principle. If chess is a game for kings, backgammon is a recreation for the immortal gods themselves.

A noble game is backgammon—as I think cousin Kate will acknowledge when she comes to cast her fine black eyes over this most veritable and unsophisticated essay.

CONSUMPTION OF SILK.—The quantity of this material used in England, alone amounts each year to more than four millions of pounds weight, for the production of which, myriads upon myriads of insects are required. Fourteen thousand millions of animated creatures annually live and die to supply this corner of the world with this luxury! If astonishment be ascribed at this act, let us extend our view to China, and survey the dense population of its widely spread region, whose inhabitants, from the emperor on the throne to the peasant in the lowly hut, are indebted for their clothing to the labors of the silk worm. The imagination, fatigued with the flight, is lost and bewildered in contemplating the countless numbers which every successive year spin their slender threads for the service of man.—[Repertory of Patent Inventions.]

A few days ago two Savoyards, travelling the country with two dancing bears, were overtaken by night on the road, and put up at a public house near Dolbe, in Calvados. Having shut up their animals in the stable, they entered the house, and after taking some refreshments, began to count their gains during the day. While thus occupied a stranger came in, and entered into conversation with them. The account being made up, and the money put into a leathern purse, one of the bear-leaders was observed by their new companion, who seems to have had some of the qualities of the fox, but not all his cunning, to carry the purse into the stable, and return empty handed. The hour of rest arrived, the party separated, and each retired. About midnight, however, the traveller, who had watched the visit to the stable, but was not aware of how the stalls were occupied, went furtively there, in hopes of finding the deposited treasure. No sooner, however, had he entered within the door than he found himself in the embraces of a rough and powerful being, with claws that entered his flesh, and so completely destroyed all his discretion that he was forced to cry out lustily for assistance. The fact was, that the bear-leaders, knowing the fidelity of their two rough-coated companions, had followed their usual custom of placing their little treasure between them for safe custody. On the following day the would-be thief was pursued to the house and arrested for a depredation he had previously committed.—[French paper.]

Ludicrous Misunderstanding.—Mr. Crabbe had, I presume, read very little about Scotland before that excursion. It appeared to me that he confounded the Iachcolm of the Frith of Forth with the Icolm-kil of the Hebrides; but John Kemble, I have heard, did the same. I believe he really never had known until then that a language radically distinct from the English was still actually spoken within the island. And this recalls a scene of high merriment which occurred the very morning after his arrival. When he came down into the breakfast parlor, Sir Walter had not yet appeared there, and Mr. Crabbe had before him two or three portly personages, and all in the full Highland garb. These gentlemen, arrayed in a costume so novel, were talking in a language which he did not understand, so he never doubted that they were foreigners. The Celts, on their part, conceived Mr. Crabbe, dressed as he was in rather an old-fashioned style of clerical propriety, with buckles in his shoes for instance, to be some learned abbe, who had come on a pilgrimage to the shrine of Waverley; and the result was, that when, a little afterwards, Sir Walter and his family entered the room, they found your father and these worthy lairds hammering away, with pain and labour, to make themselves mutually understood in most execrable French. Great was the relief, and potent the laughter, when the host interrupted their colloquy with his plain English "Good morning."—[Crabbe's Life, by his Son.]

From two volumes recently published in London, under the title of "The Doctor," in which much clever writing is displayed, and solid instruction on miscellaneous subjects imparted, we have transferred some extracts to our paper to-day:

Love of Country.—Whatever strengthens our local attachments is favorable both to individual and national character. Our home—our birth-place—our native land—think for awhile what the virtues are which arise out of the feelings connected with these words; and if thou hast any intellectual eyes thou wilt then perceive the connexion between topography and patriotism. Show me a man who cares no more for

one place than another, and I will show you in that same person one who loves nothing but himself.—Beware of those who are homeless by choice! You have no hold on a human being whose affections are without a tap-root. The laws recognize this truth in the privileges which they confer upon freeholders; and public opinion acknowledges it also, in the confidence which it reposes upon those who have what is called a stake in the country.

"I don't like morality it doses. * * *
"Nothing excellent was ever produced by any author who had the fear of censure before his eyes."

A Quack Medicine.—"When at any time it happened that one of his eyes was blood-shot, he went forthwith in search of some urchin, whose mother, either for laziness, or in the belief that it was wholesome to have it in that state, allowed his ragged head to serve as a free warren for certain 'small deer.' One of these hexapods William secured, and 'using him as if he loved him,' put it into his eye; when, according to William's account, the insect fed upon what it found, cleared the eye, and disappearing he knew not where or how, never was seen more. * * *

Time is a commodity of which the value rises as long as we live."

The Laws and Lawyers again.—He knew that laws were necessary evils; but he thought they were much greater evils than there was any necessity that they should be; and believing this to be occasioned by those who were engaged in the trade of administering them, he looked upon lawyers as the greatest pests in the country:

Because their end being merely avarice,
Winds up their wits to such a snail-like strain
As helps to blind the judge, not give him eyes.
Lord Brooke.

Bell ringing.—"It would take ninety-one years to ring the changes upon twelve bells, at the rate of two strokes to the second; changes upon fourteen could not be rung through at the same rate in less than 16,575 years; and upon four and twenty they would require more than 117,000 billions of years. Great, then, are the mysteries of bell-ringing! And this may be said in its praise, that of all devices which men have sought out for obtaining distinction by making a noise in the world, it is the most harmless."

Intelligence.—Let me observe, that I never obtained any information of any kind which did not on some occasion or other prove available.

Age.—In age we dislike all changes as natural, and, therefore, no doubt, as fitly, as in youth we desire it.

Local Attachments.—If fifty years' acquaintance did not give us some regard even for stocks and stones, we must be socks and stones ourselves.

Quare in Education.—If I had been born too poor to obtain the blessings of education, or too rich to profit by them.

Advice.—They who cannot swim should be contented with wading in the shallows: they who can, may take the deep water, no matter how deep, so it be clear. But let no one dive in the mud.

Marriage.—The man who is married for mere worldly motives, without a spark of affection on the woman's part, may nevertheless get, in every worldly sense of the word, a good wife; and while English women continue to be what, thank Heaven, they are, he is likely to do so: but when a woman is married for the sake of her fortune, the case is altered, and the chances are five hundred to one that she marries a villain, or at best a scoundrel. * * *

To set about seeking a wife is like seeking one's fortune, and the probability of finding a good one in such a quest is less, though poor enough, Heaven knows, in both cases.

The man who gets in love because he has determined to marry, instead of marrying because he is in love, goes about to private parties and to public places in search of a wife; and there he is attracted by a woman's appearance, and the figure which she makes in public, not by her amiable deportment, her domestic qualities, and her good report. Watery places might with equal propriety be called fishing places, because they are frequented by female anglers, who are in quest of such prey, the elder for their daughters, the younger for themselves. But it is a dangerous sport, for the fair Piscatrix is not more likely to catch a bonito, or a darado, than she is to be caught by a shark.

The Turkish Language.—No people have pretended to so much precision in their language as the Turks. They have not only verbs active, passive, transitive and reciprocal, but also verbs co-operative,

verbs meditative, verbs frequentative, verbs negative, and verbs impossible; and moreover they have what are called verbs of opinion, and verbs of knowledge. The latter are used when the speaker means it to be understood that he speaks of his own sure knowledge, and is absolutely certain of what he asserts; the former when he advances it only as what he thinks likely, or believes upon the testimony of others.

Feelings.—You meet in this world with false mirth as often as with false gravity; the grinning hypocrite is not a more uncommon character than the groaning one. As much light discourse comes from a heavy heart as from a hollow one; and from a full mind as from an empty head.

Eyes.—Mirth sparkled in them, scorn flashed from them, thought beamed in them, benevolence glistened in them; that they were easily moved to smiles, easily to tears.

Confirmed Habits.—Every one knows the story of the tallow chandler, who, having amassed a fortune, disposed of his business, and taken a house in the country, not far from London, that he might enjoy himself, after a few months trial of a holiday life, requested permission of his successor to come into town, and assist him on melting days. I have heard of one who kept a retail spirit shop, and having, in like manner, retired from trade, used to employ himself by having one puncheon filled with water, and measuring it off by pints into another. I have heard also, of a butcher in a small country town, who, some little time after he had left off business, informed his old customers that he meant to kill a lamb once a week, just for his amusement.

Cambridge Anecdote.—Some of my contemporaries may remember a story once current at Cambridge, of a luckless undergraduate, who being examined for his degree, and failing in every subject upon which he was tried, complained that he had not been questioned upon the things which he knew. Upon which the examining master, moved less to compassion by the impenetrable dullness of the man than to anger by his unreasonable complaint, tore off about an inch of paper, and, pushing it towards him, desired him to write upon that all he knew!

Singularity.—Of all things, a wise man will most avoid any ostentatious appearance of singularity.

Woman.—Man hath a fleece about him which enables him to bear the buffetings of the storm; but woman, when young, and lovely, and poor, is as a shorn lamb, for which the wind has not been tempered.

Disquisition in Praise of Order.—Think a moment, I beseech thee, reader, what order is! Not the mere word which is so often vociferated in the House of Commons, or uttered by the Speaker *ore rotundo*, when it is necessary for him to assume the tone of Zeus *ὀψιπτερης*; but order in its essence and truth, in itself and in its derivatives. Waving the orders in council, and the order of the day, a phrase so familiar in the disorderly days of the French National Convention, think, gentle reader, of the order of knighthood, of holy orders, of the orders of architecture, the Linnæan orders, the orderly serjeant, the ordinal numbers, the ordinary of Newgate, the ordinary on Sundays at two o'clock in the environs of the metropolis, the ordinary fates of those who partake of what is ordinarily provided for them there; and under the auspices of government itself, and *par excellence*, the extraordinary Gazette. And as the value of health is never truly and feelingly understood, except in sickness, contemplate for a moment what the want of order is. Think of disorder in things remote, and then as it approaches thee. In the country wherein thou livest, bad; in the town whereof thou art an inhabitant, worse; in thine own street, worse; in thine own house, worst of all. Think of it in thy family, in thy fortune, in thine intimates. In thy affairs, distressing; in thy members, painful; in thy conduct, ruinous. Order is the sanity of the mind, the health of the body, the peace of the city, the security of the state. As the beam is to a house, as the bones to the microcosm of man, so is order to all things. Abstract it from a dictionary, and thou mayest imagine the inextricable confusion which would ensue. Reject it from the alphabet, and Zerah Colburn himself could not go through the chriscross row. How then should I do without it in this history? A Quaker, by name Benjamin Lay, (who was a little cracked in the head, though sound at heart,) took one of his compositions once to Benjamin Franklin that it might be printed and published. Franklin having looked over the manuscript, observed, that it was deficient in arrangement. 'It is no matter replied the author, 'print any part thou pleasest first.' Many are the speeches and the sermons and the treatises and the poems, and the volumes,

which are like Benjamin Lay's book: the head might serve for the tail, and the tail for the body, and the body for the head,—either end for the middle, and the middle for either end; nay, if you could turn them inside out like a polypus, or a glove, they would be no worse for the operation. When the excellent Hooker was on his death-bed, he expressed his joy at the prospect of entering a world of order."

NOTICE TO MANUFACTURERS.

SIMON FAIRMAN, of the village of Lansingburgh, in the county of Rensselaer, and state of New-York, has invented and put in operation a Machine for making Wrought Nails with square points. This machine will make about sixty 6d nails, and about forty 10d nails in a minute, and in the same proportion larger sizes, even to spikes for ships. The nail is hammered and comes from the machine completely heated to redness, that its capacity for being clenched is good and sure. One horse power is sufficient to drive one machine, and may easily be applied where such power for driving machinery is in operation. Said Fairman will make, vend and warrant machines as above, to any persons who may apply for them as soon as they may be made, and on the most reasonable terms. He also desires to sell one half of his patent right for the use of said machines throughout the United States. Any person desiring further information, or to purchase, will please to call at the machine shop of Mr. John Humphrey, in the village of Lansingburgh.—August 15, 1833. A29t RM&F

TO RAILROAD COMPANIES.

PROFESSOR RAFINESQUE, of Philadelphia, will undertake to build CARS that will carry along their own railway, and may be used on level M'Adam roads. They will save ten millions of money to be wasted on 1000 miles of iron railroads to be laid in the United States within a few years, and dispense with tracks and double tracks. These Cars may be drawn by horses or steam. He claims to have discovered them ever since 1825, by his caveats filed in the Patent Office. Apply, post paid. 31 R J M M & F

INCOMBUSTIBLE ARCHITECTURE.

INCOMBUSTIBLE dwelling-houses and buildings of all kinds devised or built in New-York, or any part of the United States, as cheap as any other combustible buildings. Actual buildings and houses rendered incombustible at a small additional expense.

SHIPS of all sorts, and Steamboats, rendered incombustible, and not liable to sink, at a small expense.

For sale, 10,000 lbs. of **ANTIGNIS**, or Incombustible Varnish, at one dollar per lb.

Apply to **C. B. RAFINESQUE**, Professor of Hist. and Nat. Sciences, Chemist, Architect, &c. in Philadelphia, No. 59 North 5th street. A pamphlet given gratis.

References in New-York.—Mr. Minor, Editor of the Mechanics' Magazine; Messrs. Rushton & Aspinwall, Druggists. Editors in the city or country, copying this advertisement, will receive a commission on any contract procured by their means. 31 R J M M & F

RAILWAY IRON.

Ninety-five tons of 1 inch by 1/2 inch, 300 do. 1 1/2 do. 40 do. 1 do. 800 do. 2 do. 900 do. 2 1/2 do. soon expected.

250 do. of Edge Rails of 36 lbs. per yard, with the requisite chairs, keys and pins.

Wrought Iron Rims of 30, 33, and 36 inches diameter for Wheels of Railway Cars, and of 60 inches diameter for Locomotive wheels.

Axles of 2 1/2, 3, 3 1/2, 4, 4 1/2, and 5 inches diameter for Railway Cars and Locomotives of patent iron.

The above will be sold free of duty, to State Governments and incorporated Governments, and the Drawback taken in part payment.

Models and samples of all the different kinds of Rails, Chairs, Pins, Wedges, Spikes, and Splicing Plates, in use, both in this country and Great Britain, will be exhibited to those disposed to examine them. 471meowr

LOCOMOTIVE ENGINES.

THE AMERICAN STEAM CARRIAGE COMPANY, OF PHILADELPHIA, respectfully inform the public, and especially Railroad and Transportation Companies, that they have become sole proprietors of certain improvements in the construction of Locomotive Engines, and other railway carriages, secured to Col. Stephen H. Long, of the United States Engineers, by letters patent from the United States, and that they are prepared to execute any orders for the construction of Locomotive Engines, Tenders, &c. with which they may be favored, and pledge themselves to a punctual compliance with any engagements they may make in reference to this line of business.

They have already in their possession the requisite apparatus for the construction of three classes of engines, viz. engines weighing four, five, and six tons.

The engines made by them will be warranted to travel at the following rates of speed, viz. a six ton engine at a speed of 15 miles per hour; a five ton engine at a speed of 18 miles per hour; a four ton engine at a speed of 22 1/2 miles per hour. Their performance in other respects will be warranted to equal that of the best English engines of the same class, with respect not only to their efficiency in the conveyance of burdens, but to their durability, and the cheapness and facility of their repairs.

The engines will be adapted to the use of anthracite coal, pine wood, coke, or any other fuel hitherto used in locomotive engines.

The terms shall be quite as favorable, and even more moderate, than those on which engines of the same class can be procured from abroad.

All orders for engines, &c. and other communications in reference to the subject, will be addressed to the subscriber, in the city of Philadelphia, and shall receive prompt attention.

By order of the Company, **WILLIAM NORRIS**, Secretary.

December 2d, 1833. For further information on this subject see No. 49, page 778 of this Journal.

TO STEAMBOAT COMPANIES.

PROFESSOR RAFINESQUE, of Philadelphia, offers his services to render steamboats incombustible, and not liable to sink, even by the bursting of boilers, or striking against snags, sawyers and rocks. This will save many boats, much property, and the lives of hundreds every year. Those who neglect this easy improvement, deserve to be neglected and deserted by the public as unmindful of safety. Apply, post paid. 31 R J M M & F

TOWNSEND & DUFFEE, of Palmyra, Manufacturers of Railroad Rope, having removed their establishment to Hudson, under the name of **Duffee, May & Co.** offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J. B. Jervis, Eng. M. & H. R. Co., Albany; or James Archibald, Engineer Hudson and Delaware Canal and Railroad Company, Carbon dale, Luzerne county, Pennsylvania.

Hudson, Columbia county, New-York, { January 29, 1833. }

ALBANY SEED-STORE AND HORTICULTURAL REPOSITORY. The subscriber having resumed the charge of the above establishment, is now enabled to furnish traders and others with FRESH GARDEN SEEDS, upon very favorable terms, and of the growth of 1833, warranted of the best quality.

The greatest care and attention has been bestowed upon the growing and saving of Seeds, and none will be sold at this establishment excepting those raised expressly for it, and by experienced seedsmen; and those kinds imported which cannot be raised to perfection in this country; these are from the best houses in Europe, and may be relied upon as genuine.

It is earnestly requested whenever there are any failures hereafter, they should be represented to the subscriber; not that it is possible to obviate unfavorable seasons and circumstances, but that satisfaction may be rendered and perfection approximated.

Also—French Lucern, White Dutch Clover, White Mulberry Seed, genuine Mangel Wurtzel, Yellow Locust, Ruta Baga, and Field Turnip Seeds, well worth the attention of Farmers.

W. THORNBURN, 347 N. Market st. (opposite Post Office.)

Catalogues may be had at the Store; if sent for by mail, will be forwarded gratis. Orders solicited early, as the better justice can be done in the execution.

Mr. Thornburn is also Agent for the following publications, to wit:—

NEW YORK FARMER and American Gardener's Magazine. **MECHANIC'S MAGAZINE** and Register of Inventions & Improvements.

AMERICAN RAILROAD JOURNAL and Advocate of Internal Improvements; and the

NEW-YORK AMERICAN, Daily, Tri-Weekly, and Semi-Weekly; either or all of which may be seen and obtained by those who wish them, by calling at 347 North Market street, Albany.

SURVEYORS' INSTRUMENTS.

Compasses of various sizes and of superior quality, warranted.

Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by **E. & G. W. BLUNT**, 154 Water street, corner of Maidenlane. J31 6t

ENGINEERING AND SURVEYING INSTRUMENTS.

The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely new: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy—also, a Railroad Goniometer, with two Telescopes—and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.

WM. J. YOUNG, Mathematical Instrument Maker, No. 9 Dock street, Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.

In reply to the inquiries respecting the Instruments manufactured by them, now in use on the Baltimore and Ohio Railroad. I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable.

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sights, leaves the engineer scarcely anything to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to later angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying off rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend, **JAMES P. STABLER**, Superintendent of Construction of Baltimore and Ohio Railroad.

Philadelphia, February, 1833.

Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors.

E. M. GILL, Civil Engineer. Germantown, February, 1833.

For a year past I have used Instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these Instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY R. CAMPBELL, Eng. Philad., Germant and Norrist. Railroad

STEPHENSON,

Builder of a superior style of Passenger Cars for Railroads No. 264 Elizabeth street, near Bloecker street, New-York.

RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen at that part of the New-York and Harlem Railroad, now in operation. J25 1t

RAILROAD CAR WHEELS, BOXES AND OTHER RAILROAD CASTINGS.

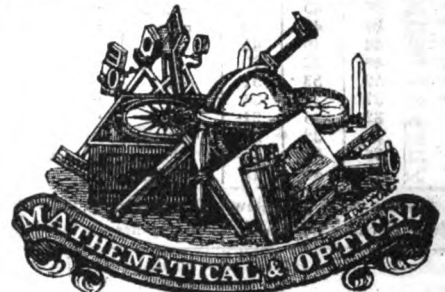
Also, AXLES furnished and fitted to wheels complete at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to. Also, CAR SPRINGS.

Also, Flange Tires turned complete. **J8 ROGERS, KETCHUM & GROSVENOR.**

NOVELTY WORKS,

Near Dry Dock, New-York.

THOMAS B. STILLMAN, Manufacturer of Steam Engines, Boilers, Railroad and Mill Work, Lathe, Presses, and other Machinery. Also, Dr. Not's Patent Tubular Boilers, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited. m18



INSTRUMENTS.

SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

EWING & HEARTTE, at the sign of the Quadrant, No. 53 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude.

For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewing & Heartte.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable.

They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES P. STABLER, Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' Instruments of your Manufacture, particularly Spirit Levels, and Surveyors' Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

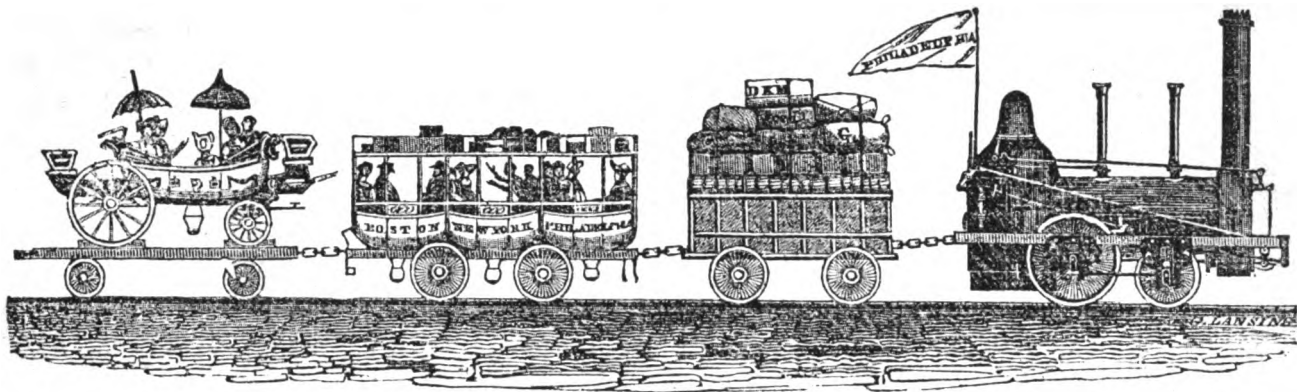
These Instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

WILLIAM HOWARD, U. S. Civil Engineer. Baltimore, May 1st, 1833.

To Messrs Ewing and Heartte.—As you have asked me to give my opinion of the merits of those Instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming acquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprise so well merits, I remain, yours, &c.

B. H. LATROBE, Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them upon application, to any person desirous of perusing the same. m18



AMERICAN RAILROAD JOURNAL, AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT No. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, EDITOR.]

SATURDAY, APRIL 5, 1834.

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, APRIL 5, 1834.

The writer of the following letter will excuse us, we trust, for publishing it without his consent. The truth is, we are driven, these hard times, to adopt all honorable means in our power to extend its circulation, that we may receive back the money it has cost us. If we can do that, by a collection of what is now due from those who have heretofore taken it, the sale of copies now on hand, and an extension of its circulation, we will never say a word more about having thus far received no compensation for our own services in superintending it. One cannot afford to work for nothing unless his expenses are defrayed: and we should not have been obliged to do so, if all who have patronized, had paid us.

LIVERPOOL, Feb. 20th, 1834.

SIR,—I am requested by Mr. Vignoles to subscribe for a sett of the Railroad Journal, with the back numbers complete, for the Institute of Civil Engineers in London, and another for the Board of Public Works of Dublin, which may both be sent as you have hitherto sent his copies. He says they will all prefer having them in semi-monthly parts, stitched in a wrapper, as you have sometimes sent them; I should also prefer mine in that way. I have, likewise, at the solicitation of Doctor Lardner, to ask you to send two copies of all the back numbers, and to continue him as a subscriber. On seeing my copy, he expressed the utmost astonishment that such a work should be published in America, and I dare say he will be the means of your procuring additional subscribers. You will please to forward me your bill, which shall be immediately paid.

Your obedient servant,

FRANCIS B. OGDEN,
Consul of the U. S. at Liverpool.

ERIE AND KALAMAZOO RAILROAD.—We are happy to learn by the following letter from one of the commissioners, that \$48,000 of the capital stock of this company has been taken, leaving but forty shares of \$50 each, to make up the full amount necessary to make a good wooden railroad from Port Lawrence to Adrian.—[Miami of the Lakes.]

“ADRIAN, March 6, 1834.

“The books for receiving subscriptions to the capital stock of the Erie and Kalamazoo Railroad Company were opened here as per notice, on the 4th instant. On that and the following day there were 960 shares subscribed, which is \$48,000. The stock finds a more ready market than was anticipated by the warmest advocate of the road. This tells well for the intelligence and enterprise of the inhabitants of the counties of Lenawee and Monroe. People of every profession, trade, and business, have taken stock. Can there be any doubt that a railroad will be built, when so many unite their strength and say *it shall go on*? Your favorite theory of wooden railroads will therefore soon be put in practice.”

By a gentleman of this place, recently from Columbus, we are informed that the Wabash and Erie Canal bill had a few days before the time of adjournment been passed by the House and sent to the Senate, where, after some trifling amendments, it also passed, and that there was no doubt that the Senate's amendment would be concurred in by the House without opposition. The bill, as we are informed verbally, provides for the immediate survey by engineers, under the direction of the Commissioners, of both banks of the river from the Indiana line to the foot of the rapids, and also an examination of the bed of the river as low down as the head of the rapids, with a view to a slack water navigation, if it should be deemed expedient.

Three gentlemen to be appointed by the governor, to select and appraise the lands belonging to the canal, which lands are to be brought into market as early as practicable, and sold for cash, provided that none shall be struck off at a less price than \$2 50 per acre, nor less than its appraised value; and no canal land can be entered at private sale until two public sales shall have been held. The proceeds of these sales are to be applied without unnecessary delay to the construction of the canal.

It is expected that the engineers will be on the route as soon as the ground is well settled.

We shall publish the canal bill as soon as we have the good fortune to lay our hands on it.—[Miami of the Lakes.]

Internal Improvements, No. V. By F. To the Editor of the American Railroad Journal, and Advocate of Internal Improvements.

SIR,—Animated discussions have at various times taken place, in relation to the particular plan that is best adapted as a general means to promote and facilitate internal commerce; and although systems have been explained, and theories investigated, in the most lucid and elaborate manner, they have been too frequently characterized by party influence, to produce any other effect than that of exciting animosities to the prejudice of the true interest of the cause.

It is not believed that any one particular plan can with propriety be recommended as most fit to subserve the general interest of the country. The circumstances which should govern the mind in the choice and adoption of such plan are principally of a local character, and entirely independent of general rules. Canals, railways, turnpikes, have each their particular province, their particular sphere of action. Each, according to circumstances, possesses, relatively, certain capabilities and advantages, for which it claims precedence over the other two; and for which alone it should be selected as most likely to conduce to the improvement of the section of country it may be intended to benefit.

One of the main causes of error, and one that has been productive of more injury than any other, may be traced to the prejudice that has so unreasonably existed in the minds of the people, against the employment of men of science in the construction of important public works. It is disgraceful to find the interests of men of this class, even when possessing a large share of practical knowledge, prejudiced by the very thing which ought, in the eyes of an enlightened community, to have advanced them; to find their services slighted and put aside to give place to those who, professing to act independently of all theory and scientific principle, and ignorant of every thing except the few practical rules indispensable in their vocations, happen to enjoy the unenviable distinction of being mere practical men. It is only by the lights of science that we can ever hope to estimate with any degree of accuracy the combined actions of different causes, and by a correct knowledge of its principles that we can avoid making improper applications

of established laws, and be enabled to draw legitimate conclusions from particular premises. It is not imagined by any reflecting person that knowledge of this kind can possibly militate against a correct conception of plans, and a judicious arrangement of details. Were it reasonable to suppose, even for a moment, the encouragement of any such ridiculous notions, many convincing instances might be adduced as evidence to maintain the contrary position,—that without its assistance no engineer can hope to attain to eminence in his profession. Prony, Tredgold, and Smeaton, were all, in some sense, practical men; but to an extensive practice they united a profound knowledge of all the different branches of mechanical science; and who have contributed more than they to the general diffusion of knowledge, under the different heads to which their attention was directed. We are persuaded that it is only from the exertions of such men (and many such may be found in this country), that we can possibly escape falling into the snares that are laid by designing men to dupe the unwary.

So much has already been written on the relative value of railroads and canals, that the subject is indeed well nigh exhausted; and although little or nothing, it is believed, can be adduced further to strengthen our position, but what has been hundreds of times reiterated from every quarter of the Union, still it cannot be passed by, consistently with the object in view and in justice to the cause we uphold, without a brief notice of some of the characteristics by which these formidable rivals, if such they must be considered, are chiefly governed. That of friction, as it has proved a fruitful source of disputation among theorists, claims particular attention, as the basis on which most of the arguments are founded; and although the experiments from which our information on this important topic is derived have been conducted with the greatest care and precision, the results differ so widely in character, and present so many material opposing points, that the laws established from the conclusions drawn from the one have ever been invalidated by those drawn from the other. It was long looked upon as a fundamental principle, that the *friction of rolling and sliding bodies was the same for all velocities*, and consequently, that any body being acted on by a constant force barely sufficient to overcome its friction, together with the resistance of the atmosphere, would, like a falling body acted on by gravitation, proceed with a motion continually accelerated, and increase beyond any assignable limit. However startling this assertion may have been at its first appearance, it yet found many to countenance its introduction, and claim its admission as a truth deserving unlimited credit. Here was a fine field for speculation; and to this apparent paradox may be traced the fountain head from which has emanated all the enthusiastic hopes and extravagant expectations which have characterized the railroad mania during the last few years. Fortunately, however, for the cause of science, men have been found sufficiently sceptical to question the truth of this absurd position. Morin, satisfied in his own mind, that his predecessors, Vince and Coulomb, had been laboring under the effect of some undefinable error, determined to sift the matter until he discovered the cause. Having prepared an apparatus for this purpose, he varied the velocity from the lowest up to ten feet per second; the rubbing surfaces from some tenths of a square inch to nearly five hundred square inches; and the pressures from ninety to twenty-five hundred pounds. All the experiments made within these limits, and they were repeated many times, agree in character, and prove, what is more consistent with our ideas, and reconcileable with our experience, that the friction of surfaces moving on each other is *entirely independent both of velocity and surface, and proportionable to the pres-*

sure. In this experiment, of course, the opposing resistance of the medium through which the body passes is abstracted.

These practical results were still, however, highly satisfactory, as placing the ability to propel carriage on railroads at a suitable speed, for the more rapid dispatch of business, beyond a doubt; and as showing the striking relative difference in the force requisite to produce the same degree of speed upon canals. But before going further, let us examine a little into the nature of this latter resistance. We find this to be governed by totally different laws: that it increases with the square of the velocity. It is the resistance of the medium through which the body passes, and is occasioned by two causes,—the cohesion of the particles and the inertia of matter. Thus, if a body move through a fluid at different velocities, the resistance will increase with the increased number of particles struck in a given time; which, of course, will be determined by the space run through in that time. If, therefore, a triple number of particles be struck, the resistance will be triple; but it increases further with the force with which the body strikes the particles, and this being proportional will be also at a triple rate, making the whole resistance nine-fold: i. e., partly in the ratio of the velocity, and partly in the duplicate ratio of that velocity.

The only apology offered for these tedious and uninteresting details, is the circumstance of their being addressed to the unenlightened—to those whose occupations may preclude them from bestowing much care and reflection upon subjects of this character. It is a desideratum admitted by all who have the interest of the country at heart, that a correct knowledge of fundamental principles be so generally diffused throughout every class of society, that each and every individual member thereof may be enabled of himself to pass judgment on the relative merits and demerits of the various schemes presented for public approbation; and to detect the fallacies of those whose wilful misrepresentations have so often before led into error. Almost every instance that has occurred where serious injury has resulted from ill-advised and ill-concerted undertakings, has been characterized by a total ignorance of the commonest rules of hydro-dynamics. Many unhappy examples might be adduced to illustrate this observation, but we forbear, in the hope that the experience derived from the past will so regulate the actions of the future as to render their recurrence, unless wilful, next to impossible.

But to return to our subject. It appears from the different nature of these resistances, that the rate of velocity on canals is confined to a very low limit, whereas the rate of that on railroads may be increased to any height that will not prove injurious to the road and carriage. On the other hand, however, it is to be remarked that this very principle, which is harped on as an insuperable objection to the further use of the canal, actually endows it with advantages that are altogether unattainable on railroads. We shall endeavor to explain this in as few words as possible. The relative good effect produced at different velocities, in round numbers, stands very nearly thus: One to three in favor of canals at a velocity of two and a half miles per hour; equal at a velocity of five miles per hour; and one to three in favor of railroads at a velocity of ten miles per hour. Now, reasoning from these premises it can be made to appear that a force of traction on a canal equal to one hundred pounds, will be amply sufficient to move a mass equal to ninety thousand pounds. A horse travelling at the slow rate of two miles per hour can draw with ease thirty-tons in a boat weighing fifteen tons. This gives us at once a proportion of one to nine hundred as the amount of resistance opposed to the motion of a vessel through the water at two miles per hour. Now, reducing this velocity to one mile per

hour, the proportion becomes one to three hundred and sixty; and if to a half a mile per hour, one to fourteen hundred and forty; or, in other words, a traction equal in force to 100 lbs. can thus at that rate draw a mass of the enormous weight of 1,444,000 lbs. This astonishing fact does not only exist in theory, but has actually been proved in practice, upon our own lakes. A single horse has been known to draw, at the rate of one mile per hour, a raft weighing two hundred tons. F.

Farther Illustration of the Principle of Mr. Ericsson's Caloric Engine. [From the London Mechanics' Magazine.]

SIR,—The following remarks, in elucidation of the principle of my Caloric Engine, will, I feel confident, not be unacceptable to your many scientific readers.

To arrive at a clear understanding of the advantage gained by the new mode of employing heat adopted in this engine, it may not be amiss to pause for a moment to consider how heat is at present made use of when employed to actuate that universal instrument of mechanical power, the steam engine. Is it necessary to the effect produced, that the heat should be absorbed or destroyed, or in any way diminished in energy? If this question can be answered in the negative, then it will be quite logical to assume that the power of the steam engine forms but a fraction of that which the combustion of a given quantity of fuel is capable of producing.

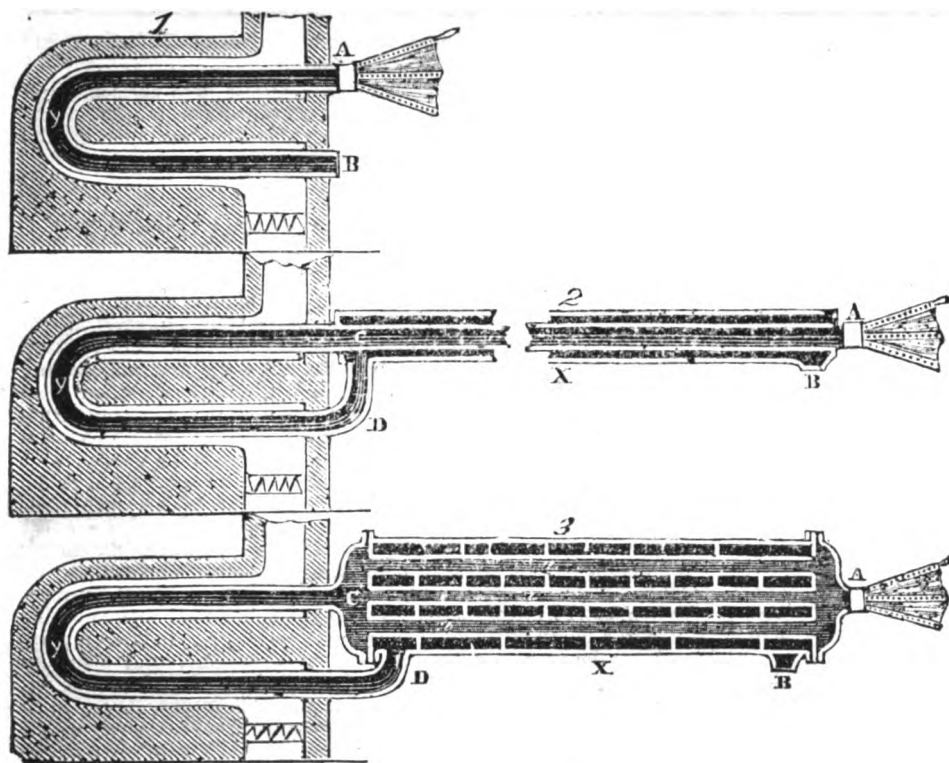
Well, then, let us suppose a quantity of steam, of known volume and pressure, to be admitted into a vessel containing cold water of a given weight and temperature; the elevation of temperature which will be produced will, of course, afford an accurate measure of the quantity of heat contained in the steam previous to its condensation. Suppose, now, that an equal volume of steam, of equal pressure, as in the first instance, is admitted under a piston, working in a cylinder, and subjected to a proportionate load; that piston will, of course, move until all the steam has been admitted, and by its motion exert a force proportionate to the pressure of the steam and the volume displaced. Let, then, the steam be discharged from under the piston into the vessel of cold water, under similar circumstances as in the first supposition, and it will be found that the *same* elevation of temperature will take place as when the steam was not previously employed to raise the piston. We thus find that *the production of mechanical force by heat is unaccompanied by any loss of heat.**

But, in the steam engine, this remarkable circumstance is not productive of any advantage, for although nearly all the heat generated in the boiler is unquestionably conducted to the condenser, that heat cannot from thence be brought back to the boiler again for the purpose of raising steam, having in the condensing process been diffused amongst a large quantity of matter, and brought to a much lower temperature than the steam.†

On these grounds the inference seems incontestible, that the steam engine is not constructed on a correct physical principle, inasmuch as it consumes a greater quantity of that precious commodity, fuel, than is neces-

* Losses by radiation need not here be taken into account, for they do not affect the theory.

† Of course, every boiler is fed from the condenser, but this produces a saving of fuel of only one-thirteenth part of the whole quantity consumed: hence thirteen-fourteenths of the heat generated is constantly wasted.



sary for the production of the mechanical force obtained.

It is well known that all fluid substances, the gases particularly, expand very considerably by being exposed to the action of heat, and that, if kept in a state of compression previous to being heated, their expansive force will, at a given temperature, be greater, and that in the same proportion as the increase of density. That an engine might be worked by means of such expansion or dilatation, will be readily admitted by any one reflecting on the subject, without referring to the diagram or sketch of the Caloric Engine, given in a recent number of your Magazine. I will, therefore, not detain your readers by detailing the manner in which the motion is practically produced by the dilatation of the heated medium, but confine myself to the theory of the contrivance, by which a nearly unlimited quantity of the impelling medium, (gaseous or fluid,) may be heated to any required temperature, by the consumption of a small quantity of fuel.*

Let fig. 1 (see the accompanying engraving) represent a furnace having a metal tube, y, conducted through the centre of its flue, to be acted on by the heat in its passage to the chimney; let a pair of bellows be attached to the pipe, y, at A, for the purpose of keeping up a constant current of air through that pipe; and let a thermometer be inserted into it at A, and another thermometer at B. Now, suppose a regular fire to be kept up, and the bellows to be regularly worked so as to blow, say 20 cubic feet of cold air into the pipe y per minute: if it then be found that, whilst the thermometer at A indicates 60°, the thermometer at B will continue to indicate 100°, it follows, as a matter of course, that the heat transmitted

by the furnace per minute will be accurately ascertained by calculating what quantity of heat is required to raise 20 cubic feet of air from 60 up to 100°. Now suppose the same furnace, with its metal tube y, to be represented by fig. 2, but instead of having the bellows attached to the metal tube, suppose them to be attached to a pipe, A C, of infinite length, and let this pipe be inclosed in a casing, X; suppose, further, this casing to be surrounded by a perfect non-conductor of heat, and instead of allowing the hot air to pass off directly, as at B in fig. 1, let it be conducted from the metal tube y, through the pipe D, into the casing X, and pass off at B. Then let thermometers be inserted in the pipes at A, C, D, and B, the bellows being worked at the same speed as before, and an equal fire kept up. At the commencement, the thermometer at A and at C will, of course, both indicate 60°, but the thermometer at C will very soon begin to rise, on account of the heat conveyed into the casing X; but any increase of temperature at C will, of course, cause an increase of temperature at D. This again will still further increase the temperature at C, and so on in continued succession, until the thermometer at D indicates a temperature nearly equal to that of the hot air in the beginning of the flue leading from the furnace: any further increase of temperature, of course, cannot take place. Now, since the quantity, or rather weight, of air forced through the metal tube y is the same as in the first proposition, and the power of the fire likewise, this latter proposition, illustrated by fig. 2, incontrovertibly proves that the temperature to which the air may be brought is made perfectly independent of the quantity of heat generated in the furnace.

But the quantity of air to be heated will also be equally independent of the quantity of heat generated: for suppose that, in the first proposition, the draught be checked so as to diminish the consumption of fuel $\frac{1}{4}$, then the 20 cubic feet of air constantly circulated per minute will be raised about 10°, instead of 40°; but apply the contrivance for bringing the heat back, as illustrated in

fig. 2, and the thermometers at C and D will be affected just as above described, except that more time will be required before the temperature at D is brought to the full height, and that less heat will ultimately escape at B. Thus it may be proved *theoretically*, that any quantity of fluid air or gaseous matter can be heated up to a high temperature, independently of the quantity of heat actually generated for that purpose. Although this is apparently a paradox, it is not so; for by referring to the illustration in figs. 2 and 3, it will at once be seen that the circulating fluid is of a high temperature only when passing the point D, and that it gradually diminishes in temperature as it recedes, and gradually increases as it advances towards that point. However, for the purpose of obtaining mechanical force this is quite as advantageous as if the fluid retained its high temperature when it escapes; for at the point D is the heated fluid admitted into the working cylinder, and from thence passed off into the casing X. The manner in which this is done, your diagram of the Caloric Engine, in a former number, fully explains.

Fig. 3 represents the form of an apparatus used in practice; its operation is precisely the same as in fig. 2, and thermometers placed at A, C, D, and B, will indicate temperatures proving the increase of temperature and transfer of heat in a similar manner. The cold fluid is forced into the furnace through a number of small tubes, Z, and the hot air is passed off through the vessel X, called the regenerator. The currents, both in this vessel and in the tubes, are broken in a peculiar manner, so as to produce a constant intermixture of particles, which is absolutely necessary for effecting a rapid transfer of heat. But to such an extent has this object been attained by the contrivances instituted, that hot air, constantly passed at the rate of 6 feet per second, through a pipe $1\frac{1}{4}$ inch bore, fourteen feet long, and entering at a temperature of 300°, has, by a counter-current of equal magnitude, been brought down to 85°, the counter-current at the same time entering at 72°.

I remain, sir, yours, &c.

J. ERICSSON.

Edward st., Regent's Park, Jan. 7, 1834.

[From the Mechanics' Magazine.]

We have received the following communication from the agent of Mr. Harris, respecting his invention, and on the same day the letter from our friend Archimedes. We have often stated that our columns are open to controversy on scientific subjects, if conducted without personalities, and we cheerfully insert both articles. We hope to receive other letters on the same subject.—[Ed. Mec. Mag.]

Harris' new Patent Twin Steamboat. To the Editor of the Mechanics' Magazine.

SIR,—In requesting the favor of you to give Mr. Harris' communication a place in your columns, I beg leave to say that I am only discharging the duty of an agent, without the remotest wish or desire to injure Mr. Burden.

There has not been a dissenting opinion among all those with whom I have consulted, and shown Harris' plans, and some of them are well qualified to judge, that it is superior to any thing yet discovered for velocity.

His invention admits of many advantages not enumerated in the following letter. Among them are, security of the inner wheels in a heavy sea, double wheels for river navigation, &c. A model of the construction may be seen at

* The journal cited in my last communication having, by some strange oversight, mistaken the Caloric Engine for an "Air Engine," it will be well to direct the attention of your readers to the fact, that various gaseous and even fluid substances, capable of considerable dilatation by heat, are equally applicable for using the heat over and over again, and for the reason that the impelling agent may be varied, while, in every case, caloric is indispensable, has the term Caloric Engine been chosen.

my office, where I invite capitalists and others to come and judge for themselves.

D. MALLORY, Chester's Buildings,
No. 1 Dey street.

D. MALLORY, Esq.:

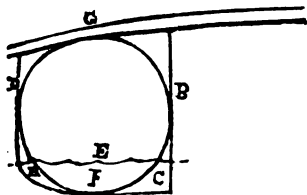
SIR,—Having for some months past observed in the papers notices of "Burden's Steamboat," and of the very great velocity with which she is expected to move, I was induced to institute a comparison between his construction and one which I invented, and have secured in the patent office at Washington; and the result is, that a boat built on my plan must move with greater velocity.

If I can establish the fact—which is the object of this communication—that a boat constructed on my plan, of equal length, and of as much weight as his, possessing a form calculated to move with less obstruction from the water, and to draw considerably less water than his, it must be manifest that my plan is superior, and must supersede his.

Before entering upon a comparison of the two plans, it is necessary that I should give you an idea of the form of my boat. You have only to imagine a boat *extremely long, very narrow*, with a flat bottom, similar to river steamboats of the present day, and *very sharp*, with *fine tapering extremities*, with the stem and stern posts in a curvilinear shape, and both inclined in opposite directions, as in common vessels; but at a very acute angle with the horizon. You have now only to conceive this boat split into equal parts, longitudinally, from stem to stern, down through the keel, and the two halves placed at any desired distance from each other in parallel lines, but joined above water by timbers and deck in the most substantial manner, and you have my plan.

I will now proceed to prove the superiority of such a construction over Burden's boat.

The lines of the figure marked A, present an end view of one of my twins cut across and *entirely through* at the centre, thereby showing the shape of the timbers or model of the twins, at the centre; the side timber, B, being 8 feet long, that is, that portion of it contained between the side timbers B and D. Within this figure is inscribed a circle of 8 feet diameter, representing an end view of one of Burden's twins, severed across at the centre also.



Now, for a clearer perception of the buoyant properties of the two plans, we will suppose that the above circle represents the circumference of a cylinder 108 feet long, which does not have tapering, pointed extremities, like Burden's, but whose ends are of the same diameter as the centre, viz. 8 feet. We will also suppose the lines of the above figure to represent the depth and width of a fabric 100 feet long also, whose ends shall have the same dimensions (8 by 8) and not pointed, as after my plan.

Bearing in mind these forms, we will assume that the weight of 200 tons are requisite to immerse the circular figure 2½ feet in the water, the surface of which is represented by the water line E.

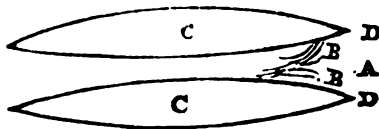
Now, a simple inspection of the two figures will suffice to show that 200 tons could immerse the black lined figure hardly more than half that depth, because, besides immersing an area equal to the segment F, it would have to immerse also the two areas G and H, which, together, are equal to ⅓, and a little more, of the area F.

The limits of the paper forbid entering into an exact mathematical calculation respecting the draft of each construction, but the foregoing figure and explanations must convince you that my plan is superior in respect of draft, and

we know that the less the draft the greater the velocity, other things being equal.

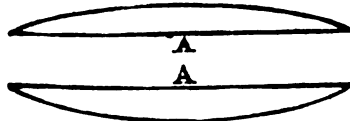
Now, in regard to "other things," they are not equal—the inequality being in my favor. For, with respect to the heads of my boat, I can model them in a manner superior to that of Burden's, for dividing and gliding over the water.

To perceive another advantage which my mode possesses over his, we will imagine that his deck is removed, and that we, being in the air over his boat, look down upon it. It will of course present the following appearance—the twins being 16 feet apart at the centre C C.

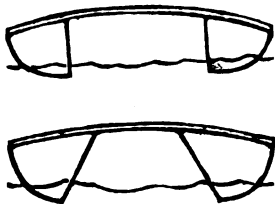


I am told that about ¼th of their length is above and clear of the water at each extremity. Therefore, supposing them to be in motion towards A, we at once perceive that a volume of water at B B, about 21 or 22 feet wide, (the distance between D and D being exact 24 feet,) must of necessity be compressed to a width of 16 feet in its passage at C C, and that the greater the power with which you urge the boat, the greater will be the accumulation of water at B B.

My boat viewed from above would present the following appearance:



on which you can of course perceive that the water in its passage between the twins can meet with no obstruction. The two inner sides at A A can be either perpendicular to the surface or inclined toward each other, shown thus by end views:



In either mode the water passes without obstruction. For certain reasons it is thought that inclined inner sides, as in the under figure, are preferable.

My other advantages are, that I can use the holds of my twins, which Burden cannot do with his; and that I can construct a much stronger fabric, capable of withstanding a heavy sea, which cannot be said of his.

It is well known that twin boats have long been in use before Mr. Burden or I ever thought of our plans. The principal point of superiority in mine over all others is, that I dispense with those great obstacles to rapid motion, the *inside bows*, represented by a a in the annexed view of a common New-York ferry-boat.

They (the two inside bows) although as sharp as the two outside bows, it can be seen at a glance, impede a boat's progress vastly more than the two latter.

The keels of my twin boats being of a curvilinear shape, allow the boat every facility required in steering and turning. Respectfully,

CHARLES HARRIS.

P. S.—I will add that, with a rough model 5 feet long, the whole of which, with all her spars and sails, weighed not 10 pounds, having hoisted her sails on the river in a good sailing breeze, I could hardly catch her in a large boat, steered by myself, and propelled by a large sail and two stout oarsmen. She beat me when I used the sail only. If a little model would do

this, what must be the velocity of a large vessel built upon this plan?

N. B.—The cuts intended to illustrate and explain the inventor's plans are so indifferently executed, that but an imperfect idea can be gained from them.

LANSINGBURGH, March 5, 1834.

To the Editor of the Mechanics' Magazine:

SIR,—I wish, through the medium of the Mechanics' Magazine, to offer a few remarks on a communication which appeared in the "Evening Star for the country," of February 28, signed by a Mr. Charles Harris, announcing his discovery of a plan of a boat which is to put Mr. Burden's boat at least into the back ground, if not into oblivion; of which wonderful discovery, Mr. H. has had the prudence to avail himself and heirs, by securing it at the patent office. I should not think proper to notice the above communication, were it not that there are persons possessing both the means and the disposition to patronize valuable improvements, but who have not sufficient acquaintance with mechanical science to enable them to judge with certainty as to the comparative merits of new inventions, until tested by experience. Such persons are liable to be imposed upon by plausible appearances, or to withhold that patronage from real merit which they would cheerfully give, if they knew where and when to bestow it.

With respect to Mr. H.'s plan of a boat, I have no disposition to question the sincerity of his belief, either as to the value of the discovery, or that he is the "true and original inventor;" but I wish to inform him, for his future benefit, and for the benefit of others, that he is as completely mistaken in one point as in the other; and he could not be more so in either.

With respect to his claim as the inventor, I would inform Mr. H. that Mr. Simon Fairman, now residing in this village, built a boat at Middletown, in Connecticut, in the year 1817, in the months of July and August, in all respects precisely on the plan which Mr. H. now claims as his. This boat, or model of a *steamboat*, was 35 feet long, and as Mr. H. very naturally describes it, was a boat split in two, lengthwise, through the middle, and the two approximate or inner sides were straight and parallel.

As it was not large enough, and indeed not intended for steam, he put in a wheel and prepared it to move by human power. It was exhibited at Middletown for some time, and he then, in the month of September, went down the river with it, and round to New-London, where it excited considerable notice.

The speed, however, was not equal to his expectations. Upon strict examination, he found that the water in the straight passage being thrown back by the wheel, left a hollow towards the stern, which caused backwater. He then took out his wheel and built a false swell of considerable thickness on each of the two straight sides, and the result was a gain in speed, with the same power, from four to six miles per hour. After running it with passengers, a number of trips, between N. London and Norwich, he sold it for \$300 to a gentleman who carried it to Denmarara. So much for the originality of Mr. H.'s invention.

As to the superiority of strength his plan possesses over Mr. Burden's boat, the best way to decide the point is to make a strong iron bound barrel of good oak staves, and fill it with some heavy substance, say pork, for instance; and take the same kind of staves and make a square box to hold the same quantity, and bind it with the same weight of iron, and see which will endure the most violence without injury; or, what will amount to the same thing, prove that angles are stronger than arches.

In the advantage which Mr. H. calculates to gain over Mr. B.'s boat by the straight passage of the water through the centre and consequent removal of the angle of resistance in meeting the water, he will thereby add just as much to

the angle, and of course to the resistance on the outside.

I am not the advocate nor the eulogist of Mr. Burden. I am scarcely known to the gentleman, or he to me. But I should be sorry to see any gentleman deterred from encouraging Mr. B. and perhaps injuring himself thereby, and I should be equally sorry to see Mr. H. throw away his money, or that of any one else, under the mistaken idea that his plan is superior. He is certainly entitled to the satisfaction of trying the experiment, and I shall enjoy the satisfaction of having warned him of its inutility.

ARCHIMEDES.

THE NEW YORK CANALS.—The prosperity of these noble works is of such vital importance to the whole State, and to this city in particular, that we shall stand excused in the eyes of all readers for presenting to them so frequently, facts tending to show the great efforts made and making in Pennsylvania, to cut us out from the trade of the West. It is from these considerations we copy the annexed article from the Pittsburgh Gazette of Wednesday last.

It is at such a time as this, when every nerve is strained to throw us out in the race of competition, that our political managers, instead of applying the accumulation of the Canal fund to the redemption of the Canal debt—so that, it being paid, the tolls might at once be very much reduced—are sporting with it in order to prop up the *Safety Fund system*. The two millions of dollars now belonging to that fund might at this moment be remitted to London, and there employed in the purchase of Canal stocks at a rate, little if any thing above par. Instead of that, it is held by the Commissioners of the fund, just as the public deposits are held by the President, as a fund to be used and transferred at pleasure, to reward this or to punish that Bank, according to the more or less political subserviency of its Directors.

And yet the Legislature and the people submit in silence. We, at least, will do our duty in calling attention to the truth as it is, and then, come what may, we shall be free from reproach.

[From the Pittsburgh Gazette, of March 26.]

THE CANAL AND RAIL ROAD are now in full and successful operation. Goods arrived yesterday, in eleven days from Philadelphia. We believe the calculation is to deliver them in ten days, when the arrangements are all completed.

We have been informed that the New Yorkers have contracted to deliver goods at Portsmouth, on the Ohio, by the way of the New York and Ohio Canal, and Lake Erie, for \$2.61.4 per hundred, when their Canal is opened. By the Pennsylvania Canal, goods will be delivered at Cincinnati for \$2.05. By the 1st day of May, this will probably be reduced to \$1.80.

In the time of transportation, we will possess a still more decided advantage. Merchandise will be delivered from Philadelphia at Cincinnati, in 14 or 15 days. From New York to Cincinnati will require 25 days, and frequently much longer. The risk, by the Lake, is very great—by the Pennsylvania Canal and Railroad, almost nothing.

The New York Canal will not be opened for more than three weeks yet—in that time, steamboats may proceed to St. Louis or Nashville, and return to Pittsburgh; and, at the same time, merchandise may be delivered at the Sault of St. Marie, or Chicago. Our prospects in relation to these great improvements, are truly encouraging, if they are not obscured by the folly and madness of General Jackson.

While on the subject of Canals, we annex the following notice from the Argus of a new bill introduced by Mr. Humphrey into the Assembly, "to provide for the improvement of the Canals of this State."

It authorizes and requires the Canal Commissioners to construct a second set of lift locks, on the Erie Canal, from Albany to Syracuse, and all proper works for the purpose of adapting the canal to the use of double locks. Also authorizes them to construct a feeder from the Niae Mile creek in the town of Camillus, to the Jordan level. Also to reconstruct the Rochester aqueduct. Also to construct a navi-

gable feeder, of a suitable width and depth for steamboats, between the Genesee river and Erie canal, and to improve the navigation of that river. The act to take effect on its passage.

INFLUENCE OF COLOR ON THE ABSORPTION OF HEAT AND OF ODOROUS PRINCIPLES.—On the 20th of June, 1833, a paper was read before the Royal Society, "On the Influence of Color on Heat and Odors," by James Stark, M. D., of Edinburgh; of which the following is an abstract.

The author observes, that the only experiments on record relating to the modifying effect of different colors on the absorption of heat from solar light are those of Franklin and Sir H. Davy. In order to investigate this subject, the author employed pieces of wool, silk, and cotton, which were wrapped round the bulb of a thermometer placed in a glass tube; the tube was then plunged into boiling water, and the time which elapsed during the rise of the thermometer from one given point to another was accurately noted. Other experiments were also made with an air-thermometer, of which the bulb was coated with various colored materials, and heat thrown on the ball by means of polished tin reflectors from an Argand burner. The results accord very nearly with those of Franklin and of Davy; the absorbing power with regard to different colors being nearly uniformly in the order of black, brown, green, red, yellow, and white. The author next investigates the differences which occur in the radiation of heat by differently colored substances; a subject on which he is not aware that any experiments have ever been made previously to his own. The mode of ascertaining the amount of radiation was generally the converse of that by which the absorption of heat had been determined: namely, by exposing the colored substances, in contact with a thermometer, to cooling instead of heating processes. The general result of all his experiments was, that the loss of caloric by radiation follows exactly the same order, with regard to the color of the radiating surface, as its absorption. In the second part of his paper the author gives an account of a course of experiments which he made with a view to discover the influence of color on the absorption of odorous effluvia, and more especially in the case of the absorption of the fumes of camphor and assafoetida by woollen cloth of different colors. Black cloth was always found to be possessed of the greatest absorbing powers, and white of the least; red cloth being intermediate between them. Cottons and silks gave, on trial, precisely the same results, which were further confirmed by the different weights acquired by these substances from the deposition of camphor upon them.—[Proceedings of the Royal Society.]

MIGRATION OF FISHES AND BIRDS.—"I fear I am not entomologist enough to follow the life of the May-fly, but I shall willingly have my attention directed to its habits. Indeed, I have often regretted that sportsmen were not fonder of zoology; they have so many opportunities, which other persons do not possess, of illustrating the origin and qualities of some of the most curious forms of animated nature; the causes and character of the migrations of animals; their relations to each other, and their place and order in the general scheme of the universe. It has always appeared to me, that the two great sources of change of place of animals was the providing of food for themselves, and resting-places and food for their young. The great supposed migrations of herrings from the poles to the temperate zone have appeared to me to be only the approach of successive shoals from deep to shallow water, for the purpose of spawning. The migrations of salmon and trout are evidently for the purpose of depositing their ova, or of finding food after they have spawned. Swallows and bee-eaters decidedly pursue flies over half a continent; the scolopax or snipe tribe, in like manner, search for worms and larvæ,—flying from those coun-

tries where either frost or dryness prevents them from boring,—making generally small flights at a time, and resting on their travels where they find food. And a journey from England to Africa is no more for an animal that can fly, with the wind, one hundred miles in an hour, than a journey for a Londoner to his seat in a distant province. And the migrations of smaller fishes or birds always occasion the migration of larger ones, that prey on them. Thus, the seal follows the salmon, in summer, to the mouths of rivers; the hake follows the herring and pilchard; hawks are seen in great quantities, in the month of May, coming into the east of Europe, after quails and landrails; and locusts are followed by numerous birds, that, fortunately for the agriculturist, make them their prey."—[Sir H. Davy's Salmonia.]

OPPOSITION OF IGNORANCE TO THE USE OF PRINTING.—In the 'Typographical Antiquities' of Ames and Herbert, it is stated that the first book printed on paper manufactured in England came out in 1495 or 1496, from the press of Winkin de Worde. Shakspeare—whose chronology is not to be trusted—makes Jack Cade, in the reign of Henry VI., (who was deposed in 1461,) thus accuse Lord Sands: "Whereas, before, our forefathers had no other books but the *score* and the *tally*, thou hast caused printing to be used, and, contrary to the king, his crown, and dignity, thou hast built a paper-mill." The insurrection of Jack Cade was ostensibly for the redress of grievances amongst the people. Shakspeare fixes the complaint of Cade against printing and paper-making some ten or twenty years earlier than the introduction of printing amongst us; but he could not have better pointed out the ignorance of popular violence,—and all violence is the result of ignorance. The best instruments for producing good government, and equal laws for all men, have been the paper-mill and the printing press; and exactly in proportion as the knowledge which they embody has been diffused, have we advanced, not only in our social arrangements, but in every other manifestation of a prosperous and well ordered community. Whatever remains to be accomplished will go hand-in-hand with the continued diffusion of knowledge.

FANNING MILL.—An ingenious wight, named William Gall, has constructed a pair of self-acting fanners, which, without the aid of man, sift wheat, corn, &c. The simplicity of the invention is astonishing. By a funnel of sheet-iron, the wheat descends upon an iron wheel full of brackets; the wheel is so nicely balanced, that the moment the wheat falls the wheel revolves, and throws the wheat into a pair of fanners on the flat below. On the outside of the iron wheel is a wooden one, and over it is a belt attached to the fly wheel of the fanners, which impels them, and so long as a particle of wheat is left, the machine moves and throws it out.—[Sat. Eve. Post.]

REMOVAL OF A STEEPLE.—The Genoa Gazette contains an account of the removal of a church steeple entire, at Crescentino, in Piedmont, from one point to another, at several yards distance, where it was placed on a new foundation. The master mason was so confident of success that he made his son remain in the steeple ringing the bell during the operation.

GAS IN THE RAILWAY CARRIAGES.—We understand that measures are in progress for the introduction of portable gas for the lighting of the railway carriages. One carriage has been already furnished with this illuminating principle.—[Manchester Advertiser.]

Sir John Herschell has sailed on his astronomical mission to the Cape of Good Hope. He is expected to be absent about three years. He went out in the Catherine Stuart private ship, which has also on board Major-General Sir B. D'Urban and staff.

Animal Mechanics, or Proofs of Design in the Animal Frame. [From the Library of Useful Knowledge.]

(Continued from page 181.)

OF THE FOOT.—Let us take the arrangement of the bones of the foot, according to the demonstration of the anatomists.

They are divided into the *tarsus*, which is composed of seven bones, reaching from the heel to the middle of the foot. The *metatarsus*, which consists of five long bones laid parallel to each other, and extending from the *tarsus* to the roots of the toes. The bones of the toes are called *phalanges*, from being in the form of a *phalanx*.

There are in all thirty-six bones in the foot; and the first question that naturally arises is, why should there be so many bones? The answer is, In order that there may be so many joints; for the structure of a joint not only permits motion, but bestows elasticity.

A joint, then, consists of the union of two bones, of such a form as to permit the necessary motion, but they are not in contact; each articulating surface is covered with cartilage, to prevent the jar which would result from the contact of the bones. This cartilage is elastic, and the celebrated Dr. Hunter discovered that the elasticity was in consequence of a number of filaments closely compacted, and extending from the surface of the bone, so that each filament is perpendicular to the pressure made upon it. The surface of the articulating cartilage is perfectly smooth, and is lubricated by a fluid called *synovia*, signifying a mucilage, a viscous or thick liquor. This is vulgarly called *joint oil*, but it has no property of oil, although it is better calculated than any oil to lubricate the interior of the joint.

When inflammation comes upon a joint, this fluid is not supplied and the joint is stiff, and the surfaces creak upon one another like a hinge without oil. A delicate membrane extends from bone to bone, confining this lubricating fluid, and forming the boundary of what is termed the cavity of the joint, although, in fact, there is no unoccupied space. External to this capsule* of the joint, there are strong ligaments going from point to point of the bones, and so ordered as to bind them together without preventing their proper motions. From this description of a single joint, we can easily conceive what a spring or elasticity is given to the foot, where thirty-six bones are jointed together.

An elegant author has this very natural remark on the joints: "In considering the joints, there is nothing perhaps which ought to move our gratitude more than the reflection, *how well they wear*. A limb shall swing upon its hinge, or play in its socket, many hundred times in an hour, for sixty years together, without diminution of its agility, which is a long time for any thing to last, for any thing so much worked and exercised as the joints are. This durability I should attribute, in part, to the provision which is made for the preventing of wear and tear: first, by the polish of cartilaginous surfaces; secondly, by the healing lubrication of the mucilage; and in part to that astonishing property of animal constitutions, assimilation, by which, in every portion of the body, let it consist of what it will, substance is restored and waste repaired."—[Paley.]

If the ingenious author's mind had been

professionally called to contemplate this subject, he would have found another explanation. There is no resemblance betwixt the provisions against the wear and tear of machinery and those for the preservation of a living part. As the structure of the parts is originally perfected by the action of the vessels, the function or operation of the part is made the stimulus to those vessels. The cuticle on the hands wears away like a glove; but the pressure stimulates the living surface to force successive layers of skin under that which is wearing, or, as the anatomists call it, *disquamating*, by which they mean that the cuticle does not change at once, but comes off in *squame*, or scales.

The teeth are subject to pressure in chewing or masticating, and they would by this action have been driven deeper in the jaw, and rendered useless, had there not been a provision against this mechanical effect. This provision is a disposition to grow, or rather to shoot out of their sockets; and this disposition to project, balances the pressure which they sustain; and when one tooth is lost, its opposite rises, and is in danger of being lost also, for want of that very opposition.

The most obvious proof of contrivance is the junction of the foot to the bones of the leg at the ankle joint. The two bones of the leg, called the *tibia* and the *fibula*, receive the great articulating bone of the foot (the *astragalus*) betwixt them. And the extremities of these bones of the leg project so as to form the outer and inner ankle. Now, when we step forward, and whilst the foot is raised, it rolls easily upon the ends of these bones, so that the toe may be directed according to the inequalities of the ground we are to tread upon; but when the foot is planted, and the body is carried forward perpendicularly over the foot, the joint of the leg and foot becomes fixed, and we have a steady base to rest upon. We next observe that, in walking, the heel first touches the

Fig. 11



ground. If the bones of the leg were perpendicular over the part which first touches the ground, we should come down with a sudden jolt, instead of which we descend in a semi-circle, the centre of which is the point of the heel.

And when the toes have come to the ground, we are far from losing the advantages of the structure of the foot, since we stand upon an elastic arch, the hinder extremity of which is the heel, and the anterior the balls of the toes. A finely formed foot should be high in the instep. The walk of opera dancers is neither natural nor beautiful; but the surprising exercises which they perform give to the joints of the foot a freedom of motion almost like that of the hand. We have seen the dancers in their morning exercises stand for twenty minutes on the extremities of their toes, after which the effort is to bend the inner ankle down to the floor, in preparation for the Bolero step. By such unnatural postures and exercises the foot is made unfit for walking, as may be observed in any

of the retired dancers and old *figurantes*. By standing so much upon the toes, the human foot is converted to something more resembling that of a quadruped, where the heel never reaches the ground, and where the paw is nothing more than the phalanges of the toes. This arch of the foot, from the

Fig. 12.



heel to the toe, has the *astragalus*, A, resembling the key-stone of an arch; but, instead of being fixed, as in masonry, it plays freely betwixt two bones, and from these two bones, B and C, a strong elastic ligament is extended, on which the bone A rests, sinking or rising as the weight of the body bears upon it, or is taken off, and this it is enabled to do by the action of the ligament which runs under it.

This is the same elastic ligament which runs extensively along the back of the horse's hind leg and foot, and gives the fine spring to it, but which is sometimes ruptured by the exertion of the animal in a leap, producing irrecoverable lameness.

Having understood that the arch of the foot is perfect from the heel to the toe, we have next to observe that there is an arch from side to side; for when a traverse section is made of the bones of the foot, the exposed surface presents a perfect arch of wedges, regularly formed like the stones of an arch in masonry. If we look down upon the bones of the foot, we shall see that they form a complete circle horizontally, leaving a space in their centre. These bones thus form three different arches—forward, across, and horizontally; they are wedged together, and bound by ligaments, and this is what we alluded to when we said that the foundations of the Eddystone were not laid on a better principle; but our admiration is more excited in observing that the bones of the foot are not only wedged together, like the courses of stone for resistance, but that solidity is combined with elasticity and lightness.

Notwithstanding the mobility of the foot in some positions, yet, when the weight of the body bears directly over it, it becomes immovable, and the bones of the leg must be fractured before the foot yields.

Smoky Chimneys. By COMFORT. To the Editor of the Mechanics' Magazine.

In the number of your periodical for January, there is an article headed "smoky chimneys," accompanied by rules for their cure, condensed from the works of Count Rumford.

*It may be observed that the improvement in fire-places was proposed by Count Rumford with a view to economy in the article of fuel, and the suffusion through rooms of an increased quantity of heat from any given quantity of fuel. The Count, indeed, observes, that his plan of a fire-place will often act as a cure to smoky chimneys, but his chief object was economy in fuel, and his experiments had this as their chief, if not their sole object.

The result of his studies, scientific and operative, led to the conclusion, in his mind, that four inches is the proper width for the

* From *capsula*, a little case or box.

throat of chimneys, and this will probably be found applicable to as many, or to more cases, than any other, which, as a general standard, could be adopted. It will not, however, be equally applicable to all cases, nor will any general rule, in this respect, apply universally.

The proper width of the throat of a chimney is the least which will admit all the smoke, together with the quantity of rarified air necessary to aid its escape through the chimney. This must be regulated by circumstances, and chiefly by the material of the fuel. Anthracite coal, producing little smoke, would require a throat even narrower than four inches. Coal, of the quality of the Sydney, producing a large volume of smoke, might perhaps require a width of throat exceeding four inches.

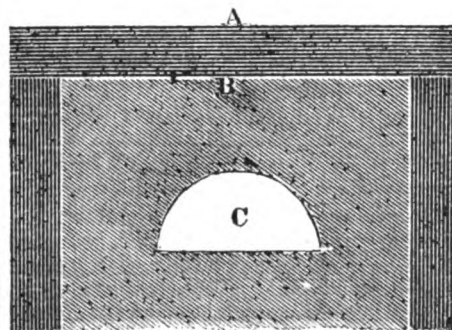
The reasonableness of thus narrowing the throat of the chimney for the purpose of yielding an increased heat to the room, will, upon the least reflection, be sufficiently obvious. The smoke, if not impeded by some obstruction, will naturally ascend through the chimney; the heat of the fire, from its affinity to smoke, will ascend with it. Should the volume of air constantly rushing into the room find an over-easy passage through the chimney, the entire, or very nearly the entire, of the heat will escape with it; hence the fact, that persons sitting in a room, in presence of a large fire, often suffer from cold, and even in a degree greater than they would were there neither fire nor fire-place in the room.

A chimney may, however, be so narrow in some part of it, or throughout the whole, that it will not admit all the smoke, a part of which will, in such case, in search of a new channel of escape, make its way into the room. A similar effect will be produced when the chimney is so injudiciously constructed that the smoke cannot escape through it with the required ease and rapidity. A chimney may be so placed in relation to another chimney within the same building, as to cause it to smoke. These different causes of smoky chimneys may require very different remedies. Count Rumford's plan of narrowing the throat of a chimney will often effect a cure, but surely not universally. I propose herein to offer a remedy, which, although not proposed as an universal panacea, will, it is presumed, effect a cure in the majority of cases of smoky chimneys.

It is generally known that by lowering the mantle-piece the draft is increased, and the smoky chimney thus partially or fully cured; but it is also known that this mode will, by increasing the draft, lessen the quantity of heat in the room, and that warmth is in this way dispensed with, to avoid the annoyance of smoke. A plan which would yield the advantage of a lowered mantle without its disadvantages would be a desideratum. This is, perhaps, not to the full desirable extent practicable; it is certainly practicable to a considerable extent. It may be introduced in aid of the Count's plan, where that fails, as a remedy for smoky chimneys, or it may be adopted in cases where mere economy is not an object, or where it would be inconvenient to resort to the Count's plan.

On reference to the cut No. 2, in your Magazine of January, it will be seen, that in order to reduce the throat of the chimney, there is a false back. This is made of solid work, and is extended about six inches above

the breast of the chimney, where the width of four inches is acquired, and is that part distinguished as the *throat*. We may suppose this false back to be in thickness equal to the length of a common brick, say eight inches. If made of the breadth of a brick, there would be a vacant space of four inches between the false and the real back. By turning an arch in the false back, or by an aperture of any other shape, there might be left an opening for the admission of smoke and air into the vacant space between the



A, chimney-piece—B, false back—C, aperture.

backs. This would produce all the effect of a lowered mantle, without producing all the inconvenience. The portion of inconvenience which it might produce would be entirely provided against by a metal casting fitted to the arch-way, and supplied with a door, to be closed or opened as occasion might require.

This contrivance would most probably relieve the occupants of houses, in nine cases out of ten, from the annoyance of smoky chimneys, and from the heavy charges of the chimney doctor.

COMFORT.

METHOD OF DRESSING SKINS PRACTISED IN MAROCCO.—The following account of the method practised in dressing skins in Morocco was transmitted to the Zoological Society by W. Willshire, Esq., a Corresponding Member of that Society, in a letter dated Mogadore, May 5, 1833. Its results are stated to be excellent, as regards the preservation and color of the fur, and the flexibility of the pelt.

Wash the skin in fresh water to deprive it of the salt; as soon as this is done, scrape the flesh off, when take two pounds of alum, one quart of buttermilk, and two or three handfuls of barley-meal, which mix well together, and lay on the fleshy side of the skin equally; fold up and press it together carefully, and let it lie two days. On the third day take it to the sea-side, wash the skin well, and when clean and free from mixture, hang it up to let the water run from it: then take two pounds of alum finely powdered, and throw or spread it equally on all parts of the skin; again fold up as before, and allow it to lie three days, when it will be in a proper state to dry in the sun, laid flat, without taking away the powder. When it is dry, take a pint or two of fresh water, and sprinkle it upon the skin, and again fold it up carefully for about two hours, to imbibe the water; then lay it on a table, and, after scraping it free from the mixture and flesh, take a sand-stone (rather rough) and rub the skin well until it becomes soft and pliable, then hang it in the shade to dry. The process is then complete.

When the skin is perfect, having the head, horns, &c. take off the horns, and fill their cavity with a mixture of equal parts of powdered alum and ashes of charcoal dissolved in water, and expose them two days to the sun. Saturate the trunks of the horns with eight ounces of alum dissolved in water, and fold up with the skin, and apply the same on each occasion when employed in curing the skin. The flesh on the head and jaws to be carefully taken

off, filling the same with powdered alum. It should remain in the sun until perfectly dry.

In addition to the foregoing description of the mode used in Morocco, in dressing skins, as related by the persons employed by Mr. Willshire, it may be well to observe that the process does not take so long at Mogadore, as Mr. W. has often received back skins of the Aoudad and Leopard from the dresser, on the third or fourth, and never exceeding the fifth day, perfectly cured. Allowance has been made by the dresser, in the foregoing description, for the difference in the climate of London.

The skins of smaller animals must not be subjected to so lengthened a process, or they will become harsh, and the pelt impoverished. —[Proceedings Zoolog. Soc.]

RECIPES.—*For an Olive Green.* Let the article be first washed in soap and water, then wetted out in warm water; then boil two ounces of chipped logwood and three ounces of chipped fustic together for half an hour; dip out your dye liquor, and put it into a pan with hot water; put in your goods; dissolve two drachms of verdigris in a teacup-full of warm water, which put into a pan of cold water; take your gown from the dye, and run it through the verdigris water, well handling it for ten minutes; take it out and wash it in clean water, and through the dye liquor, and again in the verdigris water, and so continue this process till you obtain the color required, only taking care to wash it out of the verdigris water before you put it in the dye liquor: dry it in the shade.

For Yellow Cotton.—To make a lemon yellow, first wash your article well in soap and water, then rinse it in warm water. For every yard of stout cotton, dissolve a piece of blue vitriol as large as a horse bean, in boiling water; and when the water is at a hand-heat, put the cotton in, and handle it for half an hour. In the interim take a quarter of a pound of weld for every yard of cotton, and boil it well for half an hour; dip the liquor out in a pan, and handle your cotton through this till it comes to the fullness required; take it out to cool, and when cold, wash it out, and dry it in the air.

TO PRESERVE BOOKS.—A few drops of any perfumed oil will secure libraries from the consuming effects of mould and damp. Russian leather, which is perfumed with the tar of the birch tree, never moulders; and merchants suffer large bales of this leather to remain in the London docks, knowing that it cannot sustain any injury from damp. This manner of preserving books with perfumed oil was known to the ancients. The Romans used oil of cedar to preserve valuable MSS. Hence the expression used by Horace, "*Digna cedro*," meaning any work worthy of being anointed with cedar oil, or, in other words, worthy of being preserved and remembered.—[Greenf. Gaz.]

TO PRESERVE EGGS.—Apply with a brush a solution of gum-arabic to the shells, or immerse the eggs therein; let them dry, and afterwards pack them in dry charcoal dust. This prevents their being affected by any alterations of temperature.

TO MAKE MAPLE SUGAR.—It has been customary to cut a gash in the tree, from which saccharine liquor flows, or to bore a hole, and put in a reed, and, when the liquor ceases to flow, plugging up the hole. Both these methods are injurious, and tend to destroy the tree. In the latter case, the tree roots round the plug to some distance within. The following method is proposed in lieu of these, and has been successfully practised in Kentucky. At the proper season for running of the liquor, open the ground and select a tender root, about the size of one or two fingers; cut off the end, and raise the root sufficiently out of the ground to turn the cut end into the receiver. It will emit the liquor from the wound as freely as by either of the other methods. When it ceases to flow bury the roots again, and the tree will not be hurt.

The Philosopher of Bologna unmasked; or Galvani not the Discoverer of Galvanism.
By R. W. DICKINSON. [From the London Mechanics' Magazine.]

SIR,—It appears to me very singular that no notice should ever have been taken of an experiment made by M. Du Verney, before the Fellows of the Royal Academy at Paris, in the year 1700, and published by their secretary, the celebrated M. Fontenelle, in his Account of the Transactions of the Society for that year. It is there related that M. Du Verney exhibited a dead frog, and on irritating it *with a scalpel* the nerves of the belly, that led to the thighs and legs, trembled and suffered a sort of convulsion. He afterwards cut the nerves in the belly, and stretching them with his hands, a similar convulsion was produced by the *application of the scalpel*. Now, though it may at this distance of time be impossible to adduce positive proof that Galvani was acquainted with this previous experiment of M. Du Verney, I cannot help thinking that it is *quite as likely* he was so, as that he should have come to a knowledge of the fact in the strange way he pretended, namely, through one of his pupils accidentally touching *with a scalpel* the crural nerve of a frog, which was being prepared in the laboratory of the professor, to make a soup for his sick wife. That a *frog* should have been the animal operated upon in both instances, and a *scalpel* the operating instrument, are coincidences pregnant with suspicion. At all events, this much cannot be disputed, that the Bolognese philosopher did at least only discover what Verney had discovered and made known to the world long before; though there is now, probably, as little chance of our seeing the name of *Vernicism* substituted for *Galvanism*, as *Columbia* for *America*.

I am, sir, yours sincerely,

R. W. DICKINSON.

Ilfracombe, Dec. 16, 1833.

AGRICULTURE, &c.

[From the New York Farmer.]

Suggestions relative to Farmers' Work for April. By the EDITOR.

We are under the impression that it would be policy for farmers to sow and plant as largely of the marketable crops, as they would have done had not those public measures been taken which have been so disastrous in their overthrow of confidence or credit. We hardly conceive it possible that Congress will adjourn without adopting some plan that will give to confidence its potency, and thus remove the weight from the elastic spirit of this young and rising nation. If law once more assumes its appropriate influence and its healthful tone, before the energies of the people become sensibly enervated, life and vigor will again pervade the whole system; the rivulets that every where vein our country will be free from their icy fetters, and again swell the streams of prosperity and wealth, carrying down to the cities of the sea the abundant and full-priced harvests. But should derangement stalk abroad over the land until mid-summer, then vain will be all hopes in a joyful harvest for this season. The condition of foreign nations is such that no material stimulus will be given to sales of American produce. Our chief dependence is on prosperity at home.

Ploughing.—Various opinions are given

in respect to the depth of ploughing. As a general rule, we believe the most successful farmers plough no deeper than the soil, or rather the turf, extends. This soil is not generally more than two to four inches; consequently if the plough runs five or six inches deep, the soil, or fertilizing portion of the furrow must become so very much diffused that the plants, particularly when young, will not find sufficient nourishment. This being the case, it would seem that the direction so generally given to plough a sandy loam deep, should also depend on the depth of the manured portion of the soil. The best farmers of the present day direct the utmost pains to be taken to turn the sod so completely that it will all ferment. This is done most effectually by one ploughing only, and some, to keep the sod from being in the least turned up by hoeing and ploughing the corn, pass a roller over, and then harrow the field before planting. On

Oxen.—It is very common, with even good farmers, to keep their working oxen in very thin flesh. This is bad policy; they cannot perform as much nor as heavy work; are not so capable of being substitutes for horses, nor will they last as many years; are fattened for the butcher with greater expense and in longer time. The extra expense in keeping working oxen in good condition does not probably exceed in a whole season the additional work they could thereby do in one month. And when we consider that they consume less food in fattening, and can be moderately worked all the time they are preparing for the butcher, it will be seen that there is economy in keeping a good portion of flesh always on them. Many people are under the impression that oxen in flesh cannot move as fast, nor undergo as much fatigue as they can when they are not much more than skin and bones. This is true with oxen that are well fed and *unaccustomed to labor*; but not otherwise, as many farmers can testify, and as correct reasoning would conclude.

Corn.—In communications from farmers we find that some varieties of corn will yield five pecks of shelled from two bushels of ears, and others but little, if any, more than four pecks. This seems to depend very much on the smallness of the cob. In planting corn, it is recommended to put six to eight kernels in a hill, and then to pull up at the first hoeing all but four of the most healthy spears. See page 98 and 109.

To prevent birds and fowls from scratching up the corn, the seed is covered with tar and wood ashes; and various other methods are adopted, but none that we are acquainted with have any decided advantages.

Skinless Oats.—This kind of oats begins to be considerably cultivated. As yet the seed commands a pretty high price, yet it is advisable, for every farmer who can, to procure at least a few quarts.

Flesh-colored Clover.—It would be well for farmers to furnish themselves with a few pounds, or even a few ounces of this seed, in order to test its merits. It may be of great benefit. See page 10.

Botts in Horses.—This is the season in which these worms are injurious to horses. Horses that have their food frequently seasoned with salt are said to be less liable to injury from them. Since botts seem to be fond of sweet liquids, it may be an advisable precaution to administer molasses with their food.

THE CHINESE MULBERRY.—We should advise every farmer to obtain at least one of the *Morus multicaulis*. It will not cost more than fifty cents; and by taking cuttings, or by laying, he may next spring have some ten or twenty plants.

GRAPE VINES.—Let that farmer who has not a good grape vine about his house, mount his horse and go a journey of some 10, 50, or 100 miles, to obtain an *Isabella*, *Catawba*, or some other choice native vine. It should make a farmer blush, in these days, to be compelled to say he has no vine to sit under. It implies that he is slow in availing himself of the proffered blessings of Providence—that he cannot think much of adding to the comforts and pleasures of his wife and children.

GRASS SEEDS.—It is very probable that the farmers of this country, in confining their attention exclusively to clover and timothy, do not realize as much hay and pasture as they would from a greater variety sown in the same field. In England the quantity sown to the acre for mowing is ten pounds of red clover, two of white do., two of yellow do., and one bushel of annual rye grass. For pasture, four of red clover, six of white do., four of yellow do., and one bushel of perennial rye grass. In this country grass seed is generally sown not later than the 15th of April.

YOUNG TURKIES.—No kind of domestic fowl sell better than fine turkeys; and yet comparatively few are raised in proportion to the numbers hatched. It is recommended to keep them from wet, and to feed them on homony and chopped onions. See page 13.

Forcing Asparagus. By EDWARD SAYRES. [For the New-York Farmer and American Gardener's Magazine.]

MR. FLEET.—After visiting your market at New-York, I am rather surprised at the little attention paid to forcing that useful vegetable the Asparagus, which I deem one of the first importance to the market gardener. The mode of forcing being simple, and the produce generally satisfactory, I trust a few practical remarks on the subject will be acceptable to some of your readers.

As soon as the frost is out of the ground, let a very moderate hot-bed be made, of any convenient size, with hot horse manure; the frame being placed on it in the usual manner, cover the bed three inches thick with earth, whereon the asparagus roots are to be placed, taken from an old bed or nursery rows three or four years old. The roots will require no trimming, but merely placed as thick as possible in the bed, so that the crowns are not placed on one another. This done, they are to be covered three inches with light soil or tanner's bark, when the sashes may be closed to draw the heat; but care must be taken not to let the lights remain on a day after the heat begins to rise, when six or eight inches more of light earth may be covered over the bed. The treatment is simply to give plenty of air in the day, and moderately covering the frame at night; to keep out the frost is sufficient. After the bed has been planted ten or twelve days, the roots will begin to vegetate, when a good watering is to be given every other day; and in three weeks after the time of planting, a good supply of asparagus will appear, and continue, if properly managed from 12 to 15 days.

EDWARD SAYRES.

Hyde Park, March 25, 1834.

Cultivation of Tares and Swedish Turnips.
By S. HAWES. To the Editor of the New-York Farmer.

MR. FLEET,—Having grown during the past season some tares and Swedish turnips, favorite crops with English farmers, I venture to send you some account of the culture and produce of both. About an acre of land in good condition, not having been recently cropped, was ploughed once, harrowed, and then sown with three bushels of spring tares and half a bushel of oats on the 1st of May last. I had not the seed early enough, or the tares should have been sown by the middle of April.

They grew most vigorously, and by the end of June were in flower, producing quite as much herbage as I ever saw them produce in England—indeed abundant; more than twice as much as any clover I had growing at the same time. From the time they were in flower they were cut as wanted, and given to horses, cattle, and pigs, all which ate them readily. Yet I did not think the stock did as well upon them as in England, possibly from the mode of their growth, which, either owing to the soil or climate, was different to what I had before seen. These went on growing freely after the pods were formed, though, commonly, when pods are formed, the whole strength of the plant is directed to perfect the seed, and the stalks soon cease to grow. They grew till the first week in September, when all were cut down, cured, and stacked. The haum or straw was abundant, and is excellent food for sheep. The seed a poor crop, as from half an acre I had only five bushels, which, even allowing for much waste by fowls whilst growing, was too little, as half an acre ought to produce at least fifteen bushels. I intend to sow an acre with them this spring, and hope they may yield better.

For Swedish turnips I had five acres of land, a good sandy loam, ploughed and harrowed repeatedly till clean, then manured with about twelve good two-horse loads of half rotten manure per acre, which was ploughed in, and the turnips sown at different times, from the 15th of June to the 6th of July.

The seed was drilled on the flat surface 22 inches from row to row, and on the 6th of July we began to hoe out those drilled the 15th of June. But those drilled on the 6th of July we began to hoe on the 20th, being only 14 days from the time of sowing. In England I do not recollect any fit for the hoe in less than three weeks; but here vegetation is more rapid, both of turnips and weeds. In hoeing they were left about ten or twelve inches from plant to plant in the rows. They were hoed again in twelve or fourteen days, and afterwards a third time.

The plants soon covered the ground, the tops meeting, and the crop was an excellent one, equal to any I ever had in England. Part of the ground, which was low and not well drained, produced large turnips, but not so sound or sweet as those grown on high ground in the same field.

The whole were pulled early in November and thrown in heaps, then the tops were cut off and thrown to cattle, the turnips carted home and thrown into piles about 6 or 7 feet wide at the bottom, and gradually coming to a point, which was about 5 feet from the ground. Mould a foot thick was thrown over them, leaving at every 8 or 10 feet a

small hole to allow the warm moist vapor to escape, which always arises from the slight fermentation that takes place. No straw was used. The piles have been opened as wanted for use, closing the aperture with an old door and some litter for the time, and we have lost none. Fifteen or sixteen loads were put into an old ice-house for a few weeks, but the stock did not eat them so readily as those which came out of the piles. I doubt whether any cellar will keep roots so well or so sweet as earth alone. The crop was excellent, both in quantity and quality, but no account was kept, even of the number of loads, yet there must have been more than three thousand bushels. Cattle from the first were extremely fond of them; a lot of native wethers were a long time in learning to eat them, but at length did well upon them. My own South-down ewes having been fed on them, had abundance of milk in January, and thus my early lambs will go to grass in good condition. Pigs, old and young, are fond of them, and they need no cooking. In England many store pigs are kept on scraps and bits of Swedish turnips left by cattle.

Of the expense I can give no account, nor have I much faith in such accounts generally. The preparation of the ground, and the sowing, were interrupted by repeated rains, so in pulling them up the men were repeatedly stopped by frost, and had to get them secured as they best could. The culture of tares is nothing, but hoeing turnips is expensive, yet more and better food is yielded by turnips than by any other crop on this loam. On strong soils mangold wurzel would be a better crop, as such soils seldom grow good turnips; but beet, to do well, should be sown in May, and is very liable to be hurt by early frost. Swedish turnips are not injured by even severe frosts, if used quickly after; but freezing and thawing will spoil them.

Yours respectfully,

S. HAWES.

Albany, March 11, 1834.

Mr. Nutt's System of Bee Management. [From a Friend of this distinguished Apiarian.]

It is one of the least interesting pleasures of an editor's duty to record the successful achievement of designs to which he has devoted his helping hand, to place in successful practice and deserved estimation the efforts of inventive genius, to whatever part of the wide fields of research its attention may have been devoted; and multifarious as are the objects which address themselves to his attention, in his varied capacity, as treasurer of scientific improvement and discovery, or dispenser of their benefits, it is ever a source of gratification that those exertions have been requited with merited success.

Since the first promulgation of Mr. Nutt's views, the *Mechanics' Magazine* has been the vehicle for the publication of his plans, and the furtherance of his designs. That they were possessed of originality and merit was evident, by their requiring neither sophistry nor mystery to impress them on public attention, for they claimed regard more from their simplicity than the extension at which they aimed. The pages of this Journal were alike open to the results of his patient investigation and research, as well as the queries of his opponents, and we are confident that, even to those proficient in ordinary modes of Bee Management, or who adhered with per-

tinacity to their usual modes, much good was elicited.

To the *Mechanics' Magazine* Mr. Nutt returns his obligations for the impetus which, through its medium, has been given to his system, the remuneration which he has received for his labors, and the great and extended success which has in every instance attended its introduction.

The system has now become one of facts, which are now sufficiently numerous, not to prove its superiority over all others which have preceded it, but to render its introduction a matter of important, national, economical consideration. To recapitulate individual instances of its success were only to refer to what has been extensively published in this journal. The superiority of the honey and its chemical characters are based upon the same foundation, and we therefore feel that in taking leave of the subject as a theory, or its success as merely problematical, by placing it upon permanent record, it will only be necessary to give such instances of its established success, as will at once silence the objections of rivalry. An inspection of the exhibition of the varied collections this season, at the National Gallery of Practical Science, in Adelaide street, where it has stood the test of the strictest examination, and has been the subject of much attention and inquiry, will sufficiently prove the correctness of this observation. The results of Mr. Nutt's takings, during the present year, from six colonies, has been seven hundred pounds of honey, averaging from one hundred to one hundred and twenty pounds from each hive; nor has he been alone in these marked proofs of success, as a reference may be made to the Apiaries of the Marquis of Blandford, Delabere House, near Reading; Rev. Thomas Clark, Gedney Hill; John Burman, Esq., Wisbech; and J. D. Salmon, Esq., Stoke Ferry, Norfolk, where the average products have been the same.

LIME AS A MANURE.—"Lime," observes Mr. Lambert in his excellent work on Ireland, "is peculiarly adapted to land full of weeds and roots, as it decomposes such."—"It is a better manure for wheat probably than any other crop; and the quality of wheat grown on land where it is applied is much improved, having a thinner skin, a better color, and yielding more flour."—"It may be freely applied to land devoid of much calcareous matter."

Lime should, as much as possible, be kept to the surface-soil; it readily sinks if ploughed in too deep. Though I have mentioned what many may think very heavy dressings of this manure, yet I have known good effects produced from a far lighter quantity; and I should say, it is safer to begin with a moderate dressing, which can always be increased if found necessary, than to over-dose at first. It is essential that the lime should be well slaked, and in a powdery state before spreading. To this end, if the weather chance to be dry, cover up the heaps with mould for a day or two, they will open as fine as if water-slaked.

PLANTING A VINE.—Every proprietor of a house in this city should plant one or more vines in the yard. By so doing he will add, in four or five years, at least ten dollars to his rent. Most people would be induced to give an additional sum in the rent of a house, in the yard of which there is a fine bearing grape vine. The *Isabella* is so certain in its growth, and in its bearing, and so cheap too, that no landholder need be disappointed in realizing the fruit of his labor and expense.

NEW-YORK AMERICAN.

MARCH 29—APRIL 4, 1834.

LITERARY NOTICES.

No. XIX.

Banks of the Au Sable, Jan. 15.

It was about eight o'clock, and a bright cold morning, when a handsome four horse stage coach, built in New York, and placed with more liberality than judgment on a route where a broad tired, low hung and light wagon would be much more appropriate,—drove up to my quarters at Chicago; and having received my luggage, crossed the river on the ice, and was a few moments after travelling through the deep snow over the Grand Prairie. My fellow passengers were, a respectable middle aged female and a smartly dressed young man of amiable appearance, whose handsome broadcloth suit worn as a travelling dress, bespoke the favored beau of some country village, or possibly a thriving young clerk from the city, engaged upon some agency business, and travelling in the style which he thought would best comport with the dignity of his employers. The driver was also accompanied on the box by a well made young half blood Chippeway of about five and twenty, who had come down from Mackinaw to seek employment, and was now going further South for the same object. The air being rather sharp on the Prairie, the lady took her seat between the young gentleman and myself, and thus wedged in together, we contrived to keep very comfortable—though our near neighborhood did not render us more communicative than people generally are after an early breakfast. We merely exchanged the ordinary common places which custom exacts from people thus thrown together; and then, unless when a wolf passing near our track, or a particularly large pack of grouse rising before us, called forth some exclamation, but few words were spoken by any of the company. At length, after having counted six wolves within twice as many miles, we approached a grove of timber, where while the trees grew quite densely in the centre, a few thin rows shot out like a reef of rocks from the shadowy island far into the Prairie. Here on the edge of a deep gully, through which winds the river Au Plain, was the log tavern at which the first stage of our day's journey, being 12 miles, concluded.—The horses were in a complete foam with their exertions in getting through the deep snow drifts across the prairie, and I easily persuaded the driver to abandon the comfortable but cumbersome vehicle which had brought us so far, and hitch his smoking team, which had still 12 miles to go, to a rough but strongly built sled before the door. My fellow passengers approved the arrangement, and subsequent events proved it a very fortunate one, for so deep was the snow on many parts of the road afterwards traversed, that it would have been impracticable to get a wheel carriage along, and it must have been deserted on the prairie. There was much to do however about our new equipage, before we could get started; and while our driver looked after his horses, one of the passengers had to shovel the snow out of the sleigh, another to drive a pin through the tongue, in order to fasten on the leaders, and a third, after filling the bottom with hay, to adjust the baggage, &c. &c. All this, with the aid of the stout Chippeway and the active young eastern traveller, was soon effected; and the former taking his seat with the driver on a board in front, while the latter shared half of my buffalo skins, and stowed himself upon the hay with me in the rear, Madame was well accommodated, with the cushions taken from the stage, on a trunk placed in the middle; and some heated stones being brought from the house and placed beneath her feet just as we started, no grandmother could sit more comfortably in her cushioned pew in old Trinity. A fast drive of 12 miles brought us at noon to another island of timber, where a little piquant girl of 16, with aloe black eyes and glossy locks as dark as night, arranged a plain but neat meal for us, and gave a relish to the entertainment by losing one of the most vivacious tongues I had heard wag in the last three months. Here we changed horses, and a ride of 16 miles more brought

us about nightfall to a place called "Walker's Grave," where two or three log huts were sheltered from the north wind under an island of tall timber, and in one of which we have established ourselves for the night. A pile of bur oak, which makes a capital fire, flames up the enormous wooden chimney before me, and a number of stout yeomen around it, engaged in discussing the price of horses on the Wabash, prevent me, while handling a matter of such moment, from enlarging more upon the few objects of interest which have presented themselves to-day.

Ottawa, January 16.

I was hardly dressed this morning, when my only remaining fellow-traveller—the lady and the half-blood having parted company last evening—called me to the door to "see the cloud of prairie hens before it." I looked out, and there indeed, true enough, the oaks within gun shot of the porch were so loaded with grouse, that they showed more like a flock of pigeons than a covey of game birds. Having broken my gun, however, it was intolerably vexatious to see such capital shots thrown away, while these fine birds in those districts where I was prepared to bag them, were too wild to approach within shooting distance at all. The sleigh soon after came to the door, our driver having diminished his team by two horses, to meet, probably, the reduction of passengers already mentioned, and about a hundred yards from the house, we crossed a broad brook, known as the Au Sable River, and commenced ascending the bank beyond. But the snow was deep, and the heavy drift, having had its surface frozen over during the preceding night, our single span were unable to drag through it the clumsy sledge behind them. They plunged in up to their chests—"Go ahead, Sam!—gie up, Major!" shouted the driver—but Sam was thoroughly stuck fast, while the Major, in trying to sustain his military character by obeying orders, gave one spring, and floundering over the traces, was buried in the snow up to his crupper, and placed, *nolens volens*, in full as quiescent a condition as the already settled Sam. For all of us to get out and take hold of the bits, was the next move—but it would not do. Sam, indeed, seemed a little inclined to make a retrograde movement, by kicking out the foot-board with his heels; while the Major, having gathered new energy for another charge wasted his fire in lifting up his knees as high as his mouth, and ineffectually throwing his fore hoofs in advance on the crustated snow, handling his feet the while much after the manner of the rampant unicorn on a calico stamp, who, unmindful of the motteed garter he treads under his foot, so bravely paws the crown which the complaisant lion is pushing towards him. The driver at last became convinced of the necessity of returning for another pair of horses; and a young colt, called Blackhawk, with a hoary old plough-horse named Judge, were, after a little delay, procured and placed in advance of Sam and the Major on the top of the bank. Poor Sam seemed to dislike having the Judge's fetlocks brought so immediately in contact with his nose, they being nearly on a horizontal line—and he was accordingly inclined to retreat upon his haunches beneath which the snow formed so easy a cushion; but a single crack from the driver's whip sent the Major charging so vigorously upon Blackhawk, that the sable young chief gave a bound which carried us through the difficulty in a trice, and sent our vehicle skimming fast over the prairie. The grove in which we had passed the night soon vanished from sight, and a boundless expanse of snow-covered surface lay like an ocean before us. The arch of the clear blue sky seemed to spring at once from the silvered earth, which shone under the bright January sun with an intensity almost painful to the eye. The blue vault above, and the white plain below, were the only objects that met its glances, as they roamed for miles around: yet no one could complain of sameness in the tints of a picture so vast, a scene so illimitable. The immensity of the prospect seemed to exclude the idea of monotony, and perfect solitude was only wanting in such a scene to make one feel its grandeur. The lively rattle of my companion, however, whose society, after travelling so long entirely alone, I found no slight acquisition, prevented me from realizing its full effect; and when, after riding for about twelve miles, an island of timber hove in sight, while the beautiful sky of the morning clouded over, and the cold wind which began to set in from the west, indicated that the twelve miles we had yet to travel before we should reach the first house across this arm of the prairie would be anything but agreeable, I was contented to wrap myself as closely as possible in my buffalo robe, and join him in a game of prairie loo. Lest you might search

vainly in Hoyle for this pastime, I must inform you, that the game consists merely in betting upon the number of wild animals seen by either party, toward the side of the vehicle on which he is riding, a wolf or deer counting ten, and a grouse one. The game is 100; and you may judge of the abundance of these animals from our getting through several games before dinner—my companion losing me with eleven wolves. Some of these fellows would stand looking at us, within half gun-shot, as we rode by them; while the grouse would rise continually from under our very horses' feet.

Before we had got through the twenty-four miles, the scene enacted at starting, was to be repeated with improvement; for on coming to the edge of a frozen gully, our two leaders, in their anxiety to avoid former difficulties, gave such a spring that they sunk through the ice to their shoulders, on the opposite side; while the wheel horses, being thrown down, were driven by the runners of the sleigh against the sharp edges of the ice thus exposed, and one of them was terribly lacerated. It was the unfortunate Sam, who, poor fellow, not having been watered since the morning, lay quietly on his side in the traces, with his fore legs up the slope, and his hinder ones in the pool, eating the snow thus brought in contact with his mouth, apparently perfectly unconscious of his wounds. Black Hawk and the Judge, of course, came to an anchor when they found such an accumulated weight dragging behind them; while the spirited Major seemed to be thoroughly dejected at this second discomfiture, and allowed us to turn him over and put him on his feet with scarcely the interposition of a struggle. Not far from the scene of this catastrophe we crossed the Au Sage, a narrow stream, with smooth banks, utterly divested of shubbery; and after, in the next 8 miles, encountering two or three tremendous snow banks, where our horses were frequently immersed to their cruppers, and whence nothing but the leaders, from their firm footing beyond, dragging the wheel horses thro' the heavy drift, could have extricated us, we reached a beautiful grove of elms and oaks, and stopped to change our worn-out team.

Entering a log cabin, not at all differing from the usual dwellings of the frontier settlers, I found a choice collection of books, in one corner, a volume of Algermon Sidney's works, in a fine old edition, being the first book I took up, and upon entering into conversation with the occupants of the cabin, I found that degree of general cultivation which, though often met with on the frontier, still always strikes a stranger with novelty: and yet, I know no reason why the fullest expanding of the intellect is incompatible with the handling of an axe, or the most luxuriant development of the imagination with following the plough. The farmer, of all operatives, has, perhaps, the most time for improvement; and when he dwells in a land where, while Nature showers her choicest bounties, man passes toward it from every side, and contributes on his new coming to the general stock of ideas, keeping, by this lively interchange, those already afloat in active circulation, there is everything in his circumstances to make him acute and reflective, and to liberalize his mind, if not to polish his manners.

It would be giving you a wrong impression, however, did I allow you to gather from this, that the oldest western settlers of this country are by any means so familiar with books as the emigrants from the East; for, among the latter there are many persons of altered circumstances, who, having once enjoyed better opportunities for literary culture, carry the traces of their old habits with them into the new scenes to which they so readily adapt themselves. Fluency of language, with an ease and power of expression, which sometimes swells to the dignity of eloquence, and often displays itself in terms of originality, at once humorous and forcible, constitute the conversational resources of the Western man; but as his knowledge is gathered almost altogether from conversation, he wants that exact acquaintance with facts and things which enriches the intellectual armory of his Eastern brother, in a similar situation of life. My opportunities as yet of forming an opinion might, perhaps, be questioned by one who did not know that the southern part of Michigan and the northern sections of Illinois are settled by people from almost every State in the Union. Having now traversed them both, I may venture the above observation, at least with you.

A dinner of grouse at this place came very opportunely after our keen ride of twenty-four miles over the prairie without once stopping; and, by way of varying our customary fare of bacon and corn bread along the road, we purchased a few brace of these fine

birds for twelve and a half cents a head, there being at hand a coop full of them just caught alive upon the premises. It was just sunset when, after riding about thirteen miles over a dreary looking prairie, we came suddenly to one of those *steppes* into which these singular plains sometimes break so beautifully; and, looking down over two broad platforms, which successively projected their flat surfaces and angular edges below us, beheld the Illinois river winding thro' the lowest meadow, and receiving its tributary, the Fox river, opposite the little village of Ottawa. It seemed to repose upon a rich alluvial flat with the rocky bluffs of the Illinois, rising in a regular line to the height of 70 or 80 feet immediately in the rear, while their rugged and varying outline, both above and below, towered oppositely to a much greater height. The warm light of the setting sun resting upon their mossy edges, and touching with freshness an evergreen that sprouted here and there among the cliffs, while the rising mists of evening imparted a blueish tint to the distant windings of the smooth valley below, gave an Italian softness to the landscape. But little in unison with the icy rigors that enchain the streams to which in summer it must owe its greatest beauty. A mile or two further brought us over the frozen river to the comfortable frame house from which this letter is dated.

Ottawa, which is situated a few miles above the head of steamboat navigation on the Illinois, is, from its central situation, gradually becoming a place of some commercial importance, though still a mere hamlet in size. It was within six miles of this place that the worst of the Indian horrors were perpetrated during the difficulties with the Sacs and Foxes in 1832. You must remember the newspaper accounts of every member of two families being butchered, except two young girls, who were carried into captivity, and afterwards recovered from the Indians.—There was a singular fatality attending this melancholy affair, which makes it worth while to recall some of the particulars. According to my informant, the heads of both families, who lived in the same or adjoining houses, had more than once removed their wives and children into Ottawa, upon false alarms of the approach of the Indians, and one of them, from some new warning on the very day on which the event took place, was again moving the united establishment in wagons to the same place of security, when he met the other, who so opposed and ridiculed the idea, that they returned together. An hour or two after they were at work within a few yards of the door when a band of Indians appeared, and with a triumphant yell surrounded the house in an instant. Armed only with their tools of husbandry, they did not hesitate to make an attack upon an enemy that outnumbered them, so as to make the attempt to get into the house and reach their rifles perfect madness. It is needless to add that they were shot down, tomahawked and scalped in an instant; not, however, as some say, before they had witnessed some of the atrocities practised upon the feeble members of their families. These, both before and after death, are too shocking, I may say too awful, to mention. "Why, sir," said an Illinois man to me, who was on the spot shortly afterwards, "those Indians behaved most *ridiculous*. They dashed children's brains against the door posts; they cut off their heads; they tore —" but the detail to which my informant applied so quaint an epithet is one that I would not think for a moment of giving you. I must not forget to add, that the two surviving females, after losing every near blood-relative in this horrible manner, have lately found legal protectors, and are now settled in life as respectable married women. I had previously even as far north as the borders of Michigan in Indiana, seen stockades erected in the open prairie as a place of refuge for the settlers, with other similar marks of the late border strife, but had no idea till this evening that I was approaching the seat of the bloodiest acts of the unhappy contest. The neutral Indians, who disappeared from this part of the country at the time, are now, I am told, dispersed again in large numbers over the neighborhood. They are perfectly harmless; but, though treated with great kindness by the new emigrants, there will probably never again be much confidence between them and the old settlers. The latter somehow seem to have long regarded the Indians as hereditary enemies, and the events of 1832 have given new vigor to dislikes which seemed to be gradually losing their rancor. A man who has to plough with a heavy rifle ready-loaded slung to his back, day after day, while he fears even to send his child to the spring for a pail of water, may be well excused for being warm upon a subject which must thus fill his thoughts and harass his mind throughout each hour of the day. It is, therefore, useless to argue with an

Illinois "Indian Hater." What cares he for the "lean famine, quartering steel, and climbing fire," which you tell him often beset the redman's wigwam before his ancestors made good their footing on another's land. He thinks but of the frantic outrages he has witnessed in his own day. He thinks of his often abandoned husbandry "while that the coulter rusts" corrupting in its own fertility. He thinks of his butchered friends and neighbors, and asks bitterly how you could

"Look to see
The blind and bloody savage with foul hand
Defile the locks of your shrill shrieking daughters:
Your fathers taken by the silver braids
And their most revered heads dashed to the walls;
Your naked infants spluted upon pikes,
Whilst the mad mothers with their howls confused
Do break the clouds."

An accumulation of horrid images which shows with what fearful fidelity Shakespeare would have painted Indian warfare had these wild tragedies of our day been acted in his.

Of books we have several, but not a word in their behalf to say, till after the election.

FOREIGN INTELLIGENCE.

LATE FROM FRANCE.—We have our Paris papers of 15th ult. inclusive, by the *Rhone*, from Havre.—From Spain and Portugal we have later accounts direct. From London the dates are to the 11th. Mr. O'Connell had demanded an investigation, by the House of Commons, of the charge against Mr. Shiel. The result of the demand is not stated.

The Gazette de France of the 15th inst., has this paragraph, of painful interest to Americans.

"General Lafayette is still confined by serious illness. He does not leave his bed, and his physicians forbid all but his intimate friends to enter his apartment."

PARIS, Feb. 14.—The Customs' Bill, presented to the Chamber of Deputies is at length published by the *Moniteur*, in Supplements, occupying 20 columns.—The following are its principal provisions:—The Bill proposes to admit raw spun cotton at 8fr. per kilogramme for single twist, and 10 fr. for double twist; gold and silver watches at 6 and 10 per cent.; Russian skins at 6fr. a piece; chromate of lead and potash at 90fr. and 180fr. for 100 kilogrammes; foreign rum, arrack, and ratifia, at the same duties as other *liqueurs*. The duty proposed on wool in the mass is 10 per cent., and combed wool 30 per cent., *ad valorem*, without fixing any minimum. The actual duties on iron are reduced 1.5 from July 1st 1835, but the reduction will be effected in five years, at 4 per cent. per annum. The only concession to cast iron is the reduction of the minimum of the weight of pigs to 25 kilogrammes. There are greater or less reductions of the duties on a great number of dyewoods, spices, drugs, &c. The productions of China, Cochinchina and the Philippines, imported direct, will obtain a drawback of a fifth of the duties as established for the most favored foreign arrivals. Sugars from Pondicherry, are assimilated to sugars from Bourbon.—The tariff of arms in commerce is left to be fixed by Royal Ordinances. The charge for each seal (plomb.) affixed at the Custom House, is reduced to 25 cts.

PARIS, Feb. 14.—On the 7th of next month, Constant Polari, alias Carrara, the person accused of having stolen the diamonds of the Princess of Orange, will be brought to trial before the Cour of Assizes for South Holland.

The French Chambers were occupied upon the Civil List. We perceive nothing in the debates worth noting.

The Constitutionnel of the 14th of Feb., states that on the preceding day, after long and fatiguing discussion the Chamber of Deputies had voted the law, (so warmly contested) for the liquidation of the old civil list.

Advices from Algiers are to the 30th of January. An expedition against some refractory bands of Arabs, had been successful—without hostility. After explanations from the French, the Arabs desisted from hostile acts, and promised to live in peace and harmony.

The Paris Times assails the Ministers—arguing that this is not a Representative government, where the Ministers represent the King's will before the Chambers, instead of the will and voice of the people.

ENGLAND.

The London papers are yet discussing the subject of what they term "The Irish Row," kicked up in the House of Commons by Mr. O'Connell. They attribute to O'Connell a design to destroy Shiel, as

the only member of his tail whom he has reason to fear as a rival.

Numerous petitions have been presented to Parliament, from the Disenters, praying for liberty to register their own births and marriages, and for exemption from marriage fees.

LONDON, Feb. 10.—The following circumstances have appeared before the Portsmouth magistrates this week: The ship *Marianne*, Classen, master, having on board 212 Polish refugees, bound to the United States, has been detained in this port, wind bound, five weeks. The ship was taken up by the Prussian Government, for the purpose of conveying these men from that country to America, under an agreement that on their arrival they were to be paid a sum of about sixty dollars each.—The ship was obliged to put into this port by stress of weather, and the Poles appeared to be very comfortable, and expressed their willingness to proceed to America, until Sunday last, when a Polish officer arrived from London, and communicated to them that the Poles of Harwich and Havre, who were similarly situated, had obtained permission of the French Government to land in France or Algiers, upon which the Poles here refused to proceed to America, and agreed to leave the ship on the following day. The necessary steps being taken on Monday for their leaving the ship, they peremptorily refused either to proceed to America or to leave the ship.

The next day, (Tuesday) the wind being favorable for sailing, the pilot gave directions for heaving the anchor, and as the crew were at the windlass for that purpose, the Poles rushed forward and forced the handspikes from them, stating that they were determined the ship should not proceed. They took possession of the ship; and from their violent and threatening conduct, the Captain applied to the Civil Authorities for protection, as he could not put to sea without endangering his life. Depositions of the fact were taken, and communication had with the Secretary of State, and also with the Prussian Ambassador. Thus the case stands at present.—[Hampshire Telegraph.]

The Duke of Wellington has been installed Chancellor of the University of Oxford. It is stated that he pronounced his Latin address in a most excellent and impressive manner. It was classical in style, and in substance eloquent. He alluded, with much felicity to the occasion when Oxford conferred on him the Degree of Doctor of Law, in company with the Emperor Alexander, the King of Prussia, and their illustrious train, and expressed himself determined to defend the privileges of the University, which had so gratified his feelings in conferring upon him the high office with which he is now invested.

The last despatches from the Court of St. Petersburg give such a positive assurance of a continuance of peace that a reduction of the army is talked of in the higher circles. It is believed, however, that this measure will not take place till after the close of the Congress.

General Sir Colin Campbell, has been appointed to the Staff of the British forces in North America.

SWITZERLAND.

A body of Polish refugees who had been sent out from France, have lately attempted, with such Italians as they could get to join them, to make themselves masters of a fortress in Savoy. They were opposed, however, and most of them taken prisoners, and decrees passed to expel them from the Swiss territory.

ITALY.

Several arrests had taken place in Rome, but they are merely precautionary—to guard against troubles during the Carnival.

SWEDEN.

A Stockholm Journal of the 21st January, proclaims that capital the most prosperous in Europe, and congratulates the King of Sweden on his having relieved the country from the burden of a foreign debt.

TUESDAY, THREE O'CLOCK.—We have our London papers to 26th February, by the *Roscoe*.

Paris accounts are to the 25d—fears are expressed for the stability of the throne of Louis Philippe.—Lyons was in a state of great disturbance, from the workmen standing out for wages. Louis Philippe had issued an edict—foolish, because tending to excite hostility, without answering any effective purpose—to close the theatre at 11 o'clock. The edict is justified upon old usages taken up from the Bonaparte and Bourbon times.

From Spain there are no special news, except the

resolute refusal of the ministry to permit *Mina* to return to Spain.

From Portugal the intelligence is that Miguel's troops were descending the left bank of the Tagus, and might thence annoy Lisbon. The war there is not by any means ended.

The Committee of Privilege, appointed by the House of Commons to examine into the charge against Mr. Shiel, had reported "their deliberate conviction of his innocence in respect of the whole matter," and Mr. Hill, on whose speech at Hull, we believe, the whole accusation was grounded, concurred entirely in the result, and expressed to the Committee "his deep and unfeigned sorrow for ever having given the charge circulation."

Gen. LAFAYETTE was still indisposed at the last dates from Paris.

The London Courier of the 24th contradicts a rumor circulating, that there was a schism in the Cabinet.

LIVERPOOL, FEB. 25.—The Pantaloon arrived at Falmouth on Thursday last, bringing letters from Lisbon to the 9th instant. The following is an extract of a letter dated Lisbon, February 8th:—

"The Miguelites, in great force, (about 3000 men) have marched down from Santarem, on the south side of the Tagus, and have appeared at Aldea Galega, just opposite to this city. I am informed they may be seen; and I do not doubt it. I have been told that some vessels of war have been firing on them all day. If care be not taken they will get possession of St. Ubes, and the fort of Almada, which is directly opposite the centre of the city. Without foreign interference, the war will be interminable; Miguel's troops stand by him, although they are neither half fed nor half clothed. This is not less true than surprising. Miguel has nearly the whole country in his favor."

The fact that Miguel feels himself strong enough to detach three thousand men to advance upon St. Ubes, would seem to argue that he entertains no fears for the safety of Santarem. The United Kingdom steamer disembarked four hundred and fifty Belgian troops on the 7th. They were immediately informed that their pay would be the same as the Portuguese troops, and that the agreement made with them before they embarked would not be abided by. At this they, naturally enough, became very discontented, and protested against their treatment as a dishonorable breach of faith, but to no purpose. About one hundred and fifty British subjects are daily marched through the streets of Lisbon, chained together in parties of about twelve, to work on the roads.—These are the free-born Englishmen who sailed forth to liberate enthralled Portugal from the grasp of an usurper and a tyrant! These rogues in irons have made a happy exchange; they have gone from English jails into foreign hulks. The liberators are converted into galley-slaves, and in this capacity they will certainly be useful in cleaning the streets of Lisbon.

Miguel is said to have offered an amnesty to Pedro's followers, promising to send the whole of the English and other foreign ragamuffins in Donna Maria's service to their respective countries. At the departure of the Pantaloon, this proposition had not been accepted by Pedro. The two principal officers in the Queen's service, the Duke of Terceira and General Saldanha, had quarrelled. The former, on quitting the army, was succeeded by Gen. Stubbs.

[From the London Courier of Feb. 24—evening.]

The French papers, as well as the letters, which have arrived from Paris, begin again to use the language of alarm in relation to the stability of the Government of Louis Philippe and the maintenance of tranquillity in France. The two subjects which at present have chiefly given rise to this uneasiness are, the strike of the workmen at Lyons, and the impolitic edict of the Prefect of Police at Paris to shut up all the theatres at eleven o'clock, which we mentioned on Saturday. When the whole people are ready to take fire, though willing to relapse into tranquillity, how monstrously absurd it is in this Prefect to throw a brand into the combustible heap. His foolish edict, too, comes immediately after the law for suppressing the public criers, which went to deprive the people of much excitement, which was not always mischievous, and to take away from them a source of amusement, in which they had long drank in some pleasure. The Prefect refers too, in his edict, to a variety of ordinances, issued in the hated times of the Bourbons, and under the arbitrary sway of Buonaparte, as the

justification of his measures, as if he thought they were the happy periods which the French ought to bring back. Thus he places that which is personally offensive, upon grounds which are still more offensive to the majority of those whom he undertakes to control. All this is, in our opinion, most melancholy and most contemptible in M. Gisquet, and it tends to confirm our conviction, that the administrators of the laws get into such a habit of looking exclusively into them to find rules for their conduct, that they cannot look beyond them, and never, therefore, acquire that wisdom, which events and circumstances teach. But it is quite clear, that the laws and ordinances of the Bourbon and Buonaparte Prefects of Police, are not calculated for the present state of men's minds in Paris. It is equally clear, that a new order of circumstances is continually arising in society, for which the legislators of the past age could not possibly provide, simply because they did not know, and did not foresee them. Thus the men who, like M. Gisquet, never will look for rules to events and circumstances, but always will look to antecedent edicts and ordinances, and always frame their conduct by the edicts and ordinances of their predecessors, must, of necessity, do a vast deal of mischief. They are the real authors of the painful convulsions which take place in society, inasmuch as they always oppose with violence those gradual and successive changes which, but for them, would probably be brought about calmly and tranquilly, and which society, like every created thing, is continually doomed to undergo. Their great mistake—for we do not impute corruption or guilt, or even a love of tyranny, to them, but ignorance—consists in supposing that their edicts and the edicts of their predecessors determine the events which, we say, they ought to study, in order to obtain the wisdom proper to Statesmen. This is a fatal mistake, which the events of the last fifty years in every part of Europe—for there is not one in which statesmen have not been successively obliged to bend to new and unforeseen circumstances—are well calculated to rectify. We hope that the successor of M. Gisquet, whoever he may be—and M. Gisquet cannot, without greater danger than a hundred Gisquets are worth, be retained—may be wiser, and more disposed to look at existing facts, than at the ordinances of a former period.

LONDON, FEB. 21.—Lord Althorp admits that the property of the church is much less than he imagined, and that from the returns, it only amounts to £3,600,000 a year—

Bishops' incomes	£ 158,527
Deans' and Chapters' incomes	236,658
11,400 benefices	3,621,125

£3,621,125

LONDON, FEB. 24.—A new treaty between Russia and Turkey, very much in favor of the latter was concluded at St. Petersburg on the 27th last month. By this treaty, that of Adrianople is materially modified; the amount of the debt due by the Porte is very much diminished; part of the principalities of Moldavia and Wallachia is to be given at once the Porte, and the remainder is to be given up on the execution of the conditions. The frontiers of Turkey on the side of Persia are to be considerably extended. This information is official.—[Spectator.]

THE TRADE TO CHINA.—The shipowners of the United States are under weighty obligations to the framers of the late orders in council, for the regulation of the British trade to China. These orders, in fact, impose discriminating duties in favor of the Yankees, and against the merchants of England. Were the principle on which they seem to have been drawn up acted upon in reference to our commerce to other parts of the world, the British flag would soon disappear from our docks and harbours. We have just been informed of one instance, which occurred at Liverpool the other day, of the injurious operation of these orders. Some British manufactured articles, for which freight had been engaged on board a British ship to Canton, and which had been consigned to a British house there, have been transferred to an American vessel, and are now consigned to an American merchant. The freight and commission, therefore, which would naturally have fallen into the hands of the English shipowner and merchant, will be pocketed by our American rivals; and the most provoking thing is, that this evil result is brought about by the ignorance and obstinacy of our own rulers.—The influence of Mr. Poulett Thomson must be weak in quarters where his advice ought to be followed for we cannot suppose for a moment that he is blind to the inevitable consequence of the Canton trade orders; although the great majority of his colleagues are incapacitated by their habits and education for a right understanding of the subject.—[Spectator.]

The constitution of the Cortes *por estamentos* not being generally known, our readers may wish to be informed that the Cortes, *por estamentos*, is a species of States General, which was anciently composed of the three Estates (*Estamentos*), or influential classes in the nation—namely, the Nobility, the Clergy, or rather prelacy, and the Deputies from a number of cities and towns which possessed the right of sending Members to this Parliament. Those three orders sat in separate chambers, but the sanction of all was indispensable to give force to any legal enactment; but ever since the subversion of the rights of the Commons by Charles V., the Cortes were no longer the Representatives of the nation, but merely the King's Deputies, called together for a special object, such as to take the oath of allegiance to the heir apparent to the throne, &c. But previous to the reign of Charles V. the Cortes possessed more extensive rights and privileges than are possessed by any Legislative body in Europe at this day. At that time Spain was the greatest country in Europe; but the destruction of the representative system, and consequent introduction of a severe despotism, destroyed all the energies of the people, and all the resources of that fine country, and, from being a powerful empire, has degraded it to a state of misery, and a rank quite below its natural level amongst European nations.—[Herald.]

Mr. SHIEL.—The annexed report was made in the House of Commons on the 14th of February.

It was received with cheers; and was followed by a frank and manly apology on the part of Lord Althorp to Mr. Shiel:

Charge against Mr. Shiel.

Mr. GROVE brought up the Report of the Committee appointed to inquire into the charges against Mr. Shiel. There were cries of "read, read;" and the Clerk proceeded to read it as follows:

"The Committee of Privileges, to whom the matter of complaint was referred, arising out of a paragraph in the Examiner newspaper, dated Nov. 10th, 1833, hereby submit to this honorable House the following report. The paragraph in question, purporting to form a part of a public speech, delivered at Hull, by Matthew Davenport Hill, Esq., is as follows:—"It is impossible for those not actually in the House to know all the secret machinery by which votes are obtained. I happen to know this (and I could appeal, if necessary, to a person well known and much respected by yourselves,) that an Irish member who spoke with great violence against every part of that bill, and voted against every clause of it, went to Ministers and said, 'Don't bate one single atom of that bill, or it will be impossible for any man to live in Ireland.' 'What!' said they, 'is this from you, who speak and vote against the bill?' 'Yes,' he replied, 'that is necessary; because, if I don't come into Parliament for Ireland, I must be out altogether, and that I don't choose.' Cries of 'Name,' and 'No.' Consider for a moment—can I do it? 'No.' 'Yes.' That is a point for my consideration. I have a great respect for every one here; but, if every one in the room were to hold up his hand for it, I would not do it. The secret is not my own. If he had told it to me I would have said, 'Mark, I will keep no such secret as this; I'll publish it to the world.' But if I name the member, I put it into the power of the individual who made that declaration to know the gentleman who told me." Your Committee, on entering upon the delicate and embarrassing duty imposed upon them, ascertained from Mr. Hill that, though he could not admit the entire accuracy of the above paragraph, as part of what he had publicly spoken at Hull, nevertheless, he recollected to have publicly charged an Irish member of Parliament with conduct similar in substance to that which the paragraph described. The Irish member so alluded to was Richard Lalor Sheil, Esq., Member of Parliament for Tipperary, and Mr. Hill states the charge to the best of his belief, to have been substantially as follows:—That Mr. Sheil made a communication respecting the Irish Coercion Bill to a person connected with government and others, with intention thereby of promoting the passing of the Coercion Bill, and having a direct tendency to procure that effect, whilst his speeches and votes in the House were directed to the rejection of the Coercion Bill. Such was the substance of the allegation into which the committee proceeded to inquire. Two witnesses were called before them at the suggestion of Mr. Hill, and others were about to be examined, when Mr. Hill himself, finding the testimony different from what he had expected, freely and spontaneously made a communication to the committee that he had come to the conclusion that the charge against Mr. Shiel, of having directly or indirectly intended to communicate to government any opinions in opposition to those he

had expressed in the House of Commons, had no foundation in fact; that such charge was not only incapable of proof, but that, in his sincere belief, it was totally unfounded; that he was induced to make mention of it in a hasty and unpremeditated speech, under a firm impression that he had received it on indisputable evidence; but that being now satisfied of the mistake into which he had fallen, and being convinced that the whole of the charge was wholly untrue, he came forward to express his sincere regret at having given it circulation. Mr. Hill added that if there was any way, consistent with honor, by which he could make reparation, and heal the wound he had inflicted, he should be happy to do so. The Committee felt highly gratified that they could exculpate the honorable member from the charge in consequence of the voluntary statement of the honorable member for Hull. Neither of the witnesses who appeared before the Committee deposed to facts calculated to bear out the allegations against Mr. Sheil, nor did the statement go to impeach his character and honor in any way, nor in any manner whatever. The committee have no hesitation in declaring their deliberate conviction that the innocence of Mr. Sheil, in respect to the whole matter of complaint referred to their investigation, is entire and unquestionable. The Committee feel bound at the same time to declare that the statement of Mr. Hill was made under a sincere but mistaken persuasion—they derive this confidence as well from his character as from his candid admission, and the evident anxiety to avoid exaggeration or misstatement which he observed throughout his statement."

The only additional item with respect to Portugal is, that the *Duke of Terceira* had been displaced from the command of the army before *Santarem*, by reason, it was conjectured, of the jealousy entertained of him by the Count Saldanha. General Stubbs, an Englishman, was his successor.

PARIS, FEB. 21.—Our legitimate journalists have been strongly excited at the despatch or despatches which informed them of the reception given to Marshal Maison by the Emperor of Russia, simultaneously with the arrival of the current reports of Prince Metternich's. The Prince, like the Emperor, regards the King of the French as the only efficacious guarantee for the peace of Europe, and the only powerful barrier which can preserve society from the invasions of anarchy.

General Lafayette is still indisposed. At the funeral of M. Dulong, which the old General wished to attend on foot, his fanatics, or perhaps his enemies, made an attempt to carry the hero of the two worlds in triumph. The old General did not seem to relish this. The enthusiasm of the surrounding multitude appeared to him rather equivocal, and he was well pleased when a picket of the Municipal Guard released him from the premature apotheosis. The circumstance, however, has shaken him much and though not in immediate danger, he is in a languishing state, and at his advanced age every excitement is dangerous. His death would be an event of importance, and his obsequies might give rise to scenes of disorder, if the excellent spirit of the National Guard of Paris did not afford a guarantee for the preservation of public tranquility.

From Portugal accounts to the 20th Feb., direct, are received at Boston, by a vessel from St. Ubes.—An express reached the latter place—distant not more than twelve or fifteen miles—from Lisbon, that a battle had been fought with the Miguelites, in which they were routed with great loss.

The last accounts, via England, were that a detachment of Miguel's troops were marching down the left bank of the Tagus, and were nearly opposite Lisbon—hence the greater probability that the St. Ubes rumor is true.

SUMMARY.

CITY OF BROOKLYN.—The bill constituting Brooklyn a city, which has passed the Assembly, has been for some time discussed warmly in the Senate. On Friday, (according to an Extra from the Albany Argus,) the Senate being in Committee on that bill, Mr. Van Schaick proposed the following clause:

"But the personal property of any person or persons occupying a counting house, warehouse, office, store or shop, and transacting his or their business in the city of New York, and whose property shall lie in the said city, or be a part of his business trans-

actions therein, although he may lodge or have his dwelling house in the city of Brooklyn or elsewhere, shall be assessed and subject to rateable taxation in the city of New York, in the same manner as other personal property is by law assessed and taxed therein."

In introducing his amendment, Mr. Van Schaick read the report to the Comptroller of the city of New York, in regard to the nature of the improvements at Brooklyn, being dwelling houses of a good class, occupied principally by merchants and dealers lodging in the village of Brooklyn at night, and coming over to New York in the morning, entering their stores, transacting their business during the day and returning to Brooklyn at night, and by this means escaping taxation on personal property, lying in the city of New York, to a large amount.—Mr. V. S. observed that the evil was increasing to such an extent, that its importance would force itself upon the public attention, and he alluded to individual cases. It would not be endured that persons carrying on a regular business in the city of New York, and making large sums of money in trade, should enjoy the benefit of an expenditure of \$200,000 per annum for streets, lamps, watch, fire department and courts of justice, and the ample protection of their property in trade, and should in consequence of having their dwellings in Brooklyn, escape making any contribution whatever to the public burthens of the city, while every trader and mechanic was assessed and paid his share of the taxes.

There were instances of persons escaping taxation on many hundreds of thousands of dollars, and in the course of twenty years, it might be very possible that with an increased number of ferries from Old Slip and other places to the new part of Brooklyn, one quarter or one third part of the business population of New York, residing in the first ward, would become the residents or lodging population of Brooklyn. Would such a state of things be endured? Is it consistent with any principle of justice? The first ward pays more than a fourth part of the whole taxation of the city. Are we to give up a large portion of this revenue, for the purpose of fostering the commercial rival, as some call it, which you are going to create? It must not be done. The upper wards of the city would feel themselves sorely oppressed by a decision which would lead to that result.

[Mr. V. S. supported his amendment with great zeal, and read several letters in relation to the subject, which he had received from the committee of the corporation of New York.]

The amendment was adopted.

On Saturday this amendment was reconsidered, and though warmly sustained by Mr. Van Schaick, was eventually rejected.

Mr. Van Schaick renewed his proposition in the Senate, but only four ayes supported it.

LEGISLATURE OF NEW YORK.

Six Million Loan.

Mr. Morris, from the Joint Committee to which was referred the Special Message of the Governor, made a Report, responding to the charges of the Governor against the United States Bank, and concluding with a bill providing for the creation of a five per cent. STATE STOCK amounting to Six MILLIONS OF DOLLARS, redeemable within twelve years. Four Million of Dollars of this Stock is proposed to be loaned to the Banks in the city of New York, and Two Millions to be sent to the Loan Office in the different parts of the State, to be loaned when the Supervisors of the respective Counties determine that they are in need of such aid. The \$4,000,000 given to New York, is to be loaned to the City Banks.

The bill creates a Board of Officers to manage this Stock, consisting in part of State Officers, and of persons to be appointed by the Governor and Senate.

Mr. Morris also introduced a bill allowing the Banks which may borrow this money, to discount upon it as additional capital.

THE SIX MILLION LOAN.—By the bill "to loan the credit of the State to the people thereof" for Six MILLION DOLLARS, it is left discretionary with the Commissioners whether or not to issue the stock.—The bill will unquestionably pass. The Commissioners named by the bill, are the Comptroller, the Attorney General, the Bank Commissioner appointed by the Governor, and three other persons to be appointed by the Senate on the nomination of the Governor. The Act is to go into effect immediately on its passage.

Steamboat Cause.—The Superior Court, before

Judge Hoffman, was occupied on Tuesday and Wednesday, with the trial of the suit brought by *Henry K. Fountain*, against *Robert Dunlop*, proprietor of the steamboat *Dewitt Clinton*, for the value of the petiaugre *Hudson*, owned by the plaintiff, and which was sunk on the evening of the 9th of November last, in the North River, near Catskill landing, in consequence of the collision of the two vessels in the dark. The jury yesterday morning returned a verdict of \$600 for the plaintiff. Another suit is pending against the same defendant for the value of the *Hudson's* cargo of oysters, which belonged to Mr. Simondson, the master.—[Courier.]

APPOINTMENTS by the Governor and Senate, Mar. 25.

New York—Phineas Lockwood, pilot by way of Hell Gate; Gabriel Winter, commissioner of deeds.

Kings—Zachariah Cooper, auctioneer.

Queens—Henry J. Hagner, surrogate; Benjamin W. Strong, first judge; Joseph Dodge, judge of county courts; Robert Mott, Isaac Wright, Edward Starkins, Warren Mitchell, William M. Weeks, Samuel Mott and Samuel Lowerre, auctioneers.

The Common Council of Troy have voted a suit of Colors to the new ship *Troy*, in compliment to the name she bears. The *Troy* is a very fine ship, of five hundred and thirty tons burthen, belonging to Josiah Macy & Sons. She is furnished with a beautiful cabin though designed for the general carrying trade between this country and Europe.

Fatal Accidents.—On Thursday last, Mr. Dear of Hanover, Pa. in approaching this city with his team, was thrown from the saddle horse, in consequence of the horse taking fright by the flying of a kite, and the unfortunate man fell in such a position that both wheels of the wagon passed over his body, occasioning his death in about an hour.

On Tuesday, a child of Mr. John Wilson, of Mountjoy township, Adams co. Pa. aged about 3 years, was found dead in a spring near the dwelling of the family. He had a small bucket with him, and it is thought that in attempting to dip up water, the child lost his balance and fell into the spring—where, no one being in reach to save him, the consequence was loss of life. When discovered, it was supposed that the body had been nearly an hour in the water: all attempts to resuscitate it, were therefore vain.—[Balt. Patriot.]

The estate of the late D. McCornick in Wall street, just above Pearl, sold yesterday by auction for \$46,500. The estate is 36 feet on Wall street, and from 69 to 81 feet deep. The building is of no value.

This estate a few months ago, would have sold for nearly fifty per cent. more. Fifty thousand dollars has been more than once refused for it.

The body of a man was picked up off Sewell's Point, on Friday, by the revenue cutter *Jefferson*, Capt. Webster, which appeared to have been in the water 5 or 6 days, and is thus described by Capt. W.:—Height about 5 feet 5 or 6 inches; dark complexion, large black whiskers—dress, a blue jacket, yellow oil cloth trousers, a red shirt over a white one, the latter marked *J. Perry*; the figure of a ship of war, the word *Liberty* and the initials *T. C.* marked on one of the arms in Indian ink. There was a hole in the forehead of the deceased between the eyes, apparently made by a pistol ball, and two smaller ones on the side of the nose, supposed to have been caused by shot—also, a severe bruise on the temple. The body was interred by Capt. Webster on Sewell's Point.—[Norfolk Herald, 31st ult.]

Sheep killed by Cats.—The last Lancaster Examiner says:—"Incredible as this may sound, we have good authority for saying the deed has actually been perpetrated in this county. Several cats, of the common species, with their progeny, have for three or four years past made an old stone quarry in Martine township their abiding place, and in that time it would seem have relapsed to the wild state and acquired the ferocious and predatory habits natural to their tribe. A short time ago, some of them were seen in pursuit of a full-grown sheep belonging to the flock of Mr. Martin Herr, of that vicinity. They soon overtook it, dragged it to the ground, and before the person who witnessed the scene could reach the spot, they succeeded in so lacerating the poor animal's throat that it bled to death in a short time. It required considerable exertion to drive them off. A dog, subsequently sent in pursuit of them, caught one, but would probably have been himself worsted in the conflict that ensued, had not the owner come to his rescue. It is said they also pursued a small boy some time ago, and followed him a considerable distance, as is now supposed with deadly intent.

THE DEATH-BED OF WILLIAM WIRT.—The Richmond Compiler of the 17th inst. contains the affecting account of the last illness of Mr. Wirt, written by a gentleman who attended him during that illness. We proceed to extract the principal part of it.

"On the evening of Saturday, the 8th instant, he was in playful spirits, and sanguine of the success of an argument which he was to make in Court on Monday. He felt better satisfied with his preparation, he said, than with any he had made for years before. On Sunday, he walked to the Capitol to Church—it was a damp chilly day, and the Representatives' Hall was crowded and warm. To go immediately from it into the cold, damp air, and walk slowly, as he did, a mile to his lodgings, might have been deemed imprudent in one whose health was less precarious than his then seemed.

"That night he complained of a slight indisposition, and in the family worship of the evening, prayed with an unusual fervor, and seemingly a forboding spirit, which he communicated not save to his God. But even this was sufficient to excite vague apprehensions in a family always ready to note and to dwell upon whatsoever might seem to bode danger or safety to a friend so dear.

On Monday he was confined to his room; no serious apprehensions were entertained, but a physician was called in—it was only a cold. On Tuesday he was worse, but we feared not the result. He complained of stiffness of the muscles of the throat and swelling of the glands—milk poultices were applied to his face, but they gave no relief. On Wednesday he was much worse, so much as to excite alarm; on the evening of this day, it was first discovered that the disease was Erysipelas, "a new enemy," of which Mr. Wirt then expressed his fears. "It was not the foe with which he had been so long accustomed to contend."

His constitution was too weak, as the physicians apprehended, to stand the vigorous treatment which would have been most efficient in destroying the disease. By Friday, the alarm had become very serious—the door was crowded by anxious inquiring friends, and those who met in the street asked from each other the latest intelligence. The affliction of the family was extreme, but still there was hope. On Saturday, his daughter and son-in-law arrived from Baltimore, and were shocked to find the case so much worse than their worst fears.

Scarcely a glimmer of hope was left to us, but this feeble ray was most anxiously watched and cherished. When over-shadowed by so deep a gloom, the least of the twinkling stars in the firmament is more precious to our sight, than is the sun itself in the noonday of an unclouded day.

Death, from the first day of his illness, had continued to approach with a steady pace, and in a form more than usually hideous. The fine countenance so bright with intellect, so beaming with benevolence, was sadly altered—by the disease partly, and partly by remedies so fruitlessly applied. The eyes had lost their speculation—the eloquent voice was hushed—the divinity had departed from the temple, and its walls were defaced, but life still lingered, loath to abandon a habitation which had so long given to a thing in itself so little desirable and so worthless, beauty, purity and worth.

The attending physicians were Doctors Hunt and Hall; none could have been more anxiously attentive; the latter staid by him every night of the last four or five.

About noon on Monday, consciousness returned; and he had power to speak a few words. Nature had made a last effort to permit him to take leave of his family and friends, to give assurance that he died in Christian hope, and to join them in prayer to his God. The Rev. Mr. Post officiated. In so much of the prayer as related to his family and his own acceptance with Heaven, he seemed heartily to join: but when a petition was offered that he might be restored to health, he audibly dissented—"No, no!" He had done and suffered enough in this contentious world, and was entitled to the release, and the transfer to a higher existence, which the just and good are authorized to expect.

It was now become manifest, even to the most sanguine, that recovery was beyond the remotest probability. He was too shining a mark for death longer to miss. All that was left to us was, to smooth his passage to the tomb—to moisten his dry parched lips and tongue, and perform such little offices of affection as might soothe his hard sufferings.

During the last eighteen hours, he was tranquil as a child. Breathing and warmth were the only evidences of life—no motion, no pain, no consciousness—there lay the wreck of WILLIAM WIRT.

Three friends besides the Clergymen, attended his

bed side during the night—his family, too, worn as they were by nearly a week's watching, could not be induced to take repose. Anguish and affection gave them strength to bear what would have exhausted the strongest men. It was a night long to be remembered—a night of silent, despairing sorrow, which conveys to the heart a language never to be forgot—a language which is not for a pen like mine to transcribe.

Tuesday morning breaks upon the scene still unaltered, save that life flittered more faintly and all pulse was gone. About 11 o'clock the breathing became gradually more distant and more feeble—are suspended or imperceptible—another breath—he's gone? So calmly, so imperceptibly did he make his exit, that the precise moment of his departure could scarcely be marked—without a sigh or a struggle his bright spirit has departed from amongst us, to a state of existence higher, mightier and more glorious.

Upon a highly excited mind, a slight incident will sometimes make a deep and lasting impression. As the last flickerings of life were failing—while his whole family, and the friends who had watched with them, grouped around his bed, and in silent, deep attention to the awful scene, all held their breath, and their hearts and pulses stood still, a few soft, low notes from a pet bird, which had before been so silent that its presence in the room was unremarked, fell with startling sweetness on the ear. Only once before during his illness, had it been known to sing. On the preceding day, at the conclusion of the last act of devotion in which he ever joined, these same soft notes had mingled with the solemn Amen.

Eloquent extract from a Review of the Life and Writings of Fenelon, by Dr. Channing.

The common idea is, that overwhelming emotions, the more they are experienced, can the more effectually be described. We have one strong presumption against this doctrine. Tradition leads us to believe, that Shakespeare, though he painted so faithfully and fearfully the storms of passion, was a calm and cheerful man. The passions are too engrossed by their objects to meditate on themselves; and none are more ignorant of their growth and subtle workings than their own victims. Nothing reveals to us the secrets of our own soul like religion; and in disclosing to us, in ourselves, the tendency of passion to absorb every energy, and to spread its hues over every thought, it gives us a key to all souls; for in all, human nature is essentially one, having the same spiritual elements, and the same grand features. No man, it is believed, understands the wild and irregular motions of the mind, like him in whom a principle of divine order has begun to establish peace. No man knows the horror of thick darkness which gathers over the slaves of vehement passions, like him who is rising into the light and liberty of virtue. There is indeed a selfish shrewdness, which is thought to give a peculiar and deep insight into human nature. But the knowledge, of which it boasts, is partial, distorted, and vulgar, and wholly unfit for the purposes of literature. We value it little. We believe, that no qualification avails so much to a knowledge of human nature in all its forms, in its good and evil manifestations, as that enlightened celestial charity, which religion alone inspires; for this establishes sympathies between us and all men, and thus makes them intelligible to us. A man imbued with this spirit, alone contemplates vice, as it really exists, and as it ought always to be described. In the most depraved fellow beings he sees partakers of his own nature. Amidst the terrible ravages of the passions, he sees conscience, though prostrate, not destroyed, nor wholly powerless. He sees the proofs of an unextinguished moral life, in inward struggles, in occasional relentings, in sighings for lost innocence, in reviving throbs of early affections, in the sophistry by which the guilty mind would become reconciled to itself, in remorse, in anxious forebodings, in despair, perhaps in studied recklessness and cherished self forgetfulness. These conflicts between the passions and the moral nature are the most interesting subjects in the branch of literature to which we refer, and we believe that to portray them with truth and power, the man of genius can find in nothing such effectual aid, as in the development of the moral and religious principles in his own breast. *Genius, intellect, imagination, taste, and sensibility, must all be baptized into religion, or they will never know, and never make known, their real glory and immortal power.*

We learn, says the Baltimore American of yesterday, from an unquestionable source, that large remittances from the Union Bank of Tennessee have

been received within a few days, for the redemption of its notes made payable at the Bank of Maryland, and that these funds have been forwarded to Philadelphia. It is probable that arrangements will soon be made for their proper application in Baltimore.

Naval.—The U. S. ship Falmouth, Capt. Spencer, bound to West Indies, sailed from Hampton Roads 26th inst.

The two Austrian frigates with Polish exiles, to the number of 245, arrived below last Friday.—We have not heard that any arrangements have been made either by the public authorities, or private individuals, for putting these ill-fated exiles, in the way of procuring a living. Indeed, at this moment, when thousands of our citizens, willing and anxious to work, are unable to find employment, we fear that it will be difficult to provide for this new accession.

Commodore Ridgely despatched a barge next morning, offering to these frigates the usual hospitalities of the port.

THE POLISH EXILES, who have come hither in the Austrian frigates, *not only without their own consent* as it is understood, but protesting solemnly against, being forcibly torn from Europe and thrown destitute upon a land of whose language they are ignorant and where they will be without any means of existence, are entitled to the sympathy of this community.

These unfortunate men—as we learn from the writer of the annexed letter, one of their countrymen—were gathered together from different parts of Austria—passed from brigade to brigade down to Trieste, and there, being each furnished with a great coat, a pair of trousers, and one or two other necessities, sent on board the frigates—and thus were brought away forcibly from Europe. They are each to receive here a sum of about \$22: there is only one female, seven or eight officers, and the rest soldiers.

The first steps should be to provide these people with some clothing, and an asylum, so that they may not be obliged to prowl about the streets, or be stripped of their little money by persons taking advantage of their ignorance of our language, &c.—Then time might be taken for making ulterior arrangements.

Among these people are some who have been farriers: they may find employment, we presume, with our blacksmiths. The great mass, however, have only their stout arms to rely upon. Their case, we are sure, will excite the sympathy of our citizens, to whom we commend the annexed appeal of M. Gerard:

To the Editor of the New York American.

SIR—It is in the name of 240 Polish exiles that I ask through your Journal, the opportunity of making an appeal to your fellow citizens. Emboldened by the recollection of the many kindnesses which Americans have lavished upon me, during the eighteen months that I have dwelt among them, I address myself to their hearts, in the full conviction that they will not be insensible to that compassion, which constitutes now the whole dependence of my ill-fated countrymen. May they in their turn experience the blessed fruits of that benevolence, which has so much contributed to ameliorate my condition. Especially, may they be permitted to draw from that source, which the charity of the ladies of New York so abundantly supplies. Soon then would the wretched state of destitution in which they now are, be changed for one less discouraging—and on our part, we Poles, will know how to acknowledge the aid that shall be extended to our misfortunes.

I have the honor to be, Sir,

With the highest consideration,
Your devoted servant,
GERARD,
Antient Polish Officer.

New York, 31st March, 1834.

Subscriptions for the succour of these exiles will be received at the residence of Mr. GERARD, 33 Chapel street.

Since the above was in type we observe, with much

pleasure, that the Common Council have taken steps to ascertain the circumstances, and devise means for the support, of these exiles.]

They have been landed at Castle garden, where they are for the present quartered.

[FOR THE NEW YORK AMERICAN.]
TO M—

That little blossom of the early spring,
Which you so kindly did receive from me,
Is its soft name is ever whispering,
All that I can or ought to ask of thee.
Ah could I feel, in after years of sorrow,
That in thy memory I should hold a place,
From that sweet feeling, my fond love would borrow,
A joy that sorrow's self could ne'er efface.
A gleam 'twould be, of glad and sunny brightness,
And it would come in many a gloomy hour,
To cheer my darkened spirit with its lightness,
And woo it back from Melancholy's power.
Then bid my heart that flattering hope to cherish,
In all the changes of my future lot,
Say that my image shall not sadly perish,
Oh tell me that thou wilt "forget me not."
Wednesday night, March 18.

NOTICE TO MANUFACTURERS.

SIMON FAIRMAN, of the village of Lanesburgh, in the county of Rensselaer, and state of New-York, has invented and put in operation a Machine for making Wrought Nails with square points. This machine will make about sixty 6d nails, and about forty 10d nails in a minute, and in the same proportion larger sizes, even to spikes for ships. The nail is hammered and comes from the machine completely heated to redness, that its capacity for being clenched is good and sure. One horse power is sufficient to drive one machine, and may easily be applied where such power for driving machinery is in operation. Said Fairman will make, vend and warrant machines as above, to any persons who may apply for them as soon as they may be made, and on the most reasonable terms. He also desires to sell one half of his patent right for the use of said machines throughout the United States. Any person desiring further information, or to purchase, will please to call at the machine shop of Mr. John Humphrey, in the village of Lanesburgh.—August 15, 1833. A29 if RM&F

TO RAILROAD COMPANIES.

PROFESSOR RAFINESQUE, of Philadelphia, will undertake to build CARS that will carry along their own railway, and may be used on level M'Adam roads. They will save ten millions of money to be wasted on 1000 miles of iron railroads to be laid in the United States within a few years, and dispense with tracks and double tracks. These Cars may be drawn by horses or steam. He claims to have discovered them ever since 1825, by his caveats filed in the Patent Office. Appl. not paid. B1 R J M & F

RAILWAY IRON.

Ninety-five tons of 1 inch by 1/2 inch,	Flat Bars in lengths of 14 to 16 feet counter sunk holes, ends cut at an angle of 45 degrees with splicing plates, nails to suit.
300 do. 1 1/2 do. 1/2 do.	
40 do. 1 3/4 do. 1/2 do.	
500 do. 2 do. 1/2 do.	
800 do. 2 1/2 do. 1/2 do.	
soon expected.	

250 do. of Edge Rails of 85 lbs. per yard, with the requisite chairs, keys and pins.
Wrought Iron Pins of 30, 33, and 36 inches diameter for Wheels of Railway Cars, and of 60 inches diameter for Locomotives wheels.
Axles of 24, 28, 32, 36, 38, 40, and 42 inches diameter for Railway Cars and Locomotives of patent iron.
The above will be sold free of duty, to State Governments and Incorporated Governments, and the Drawback taken in part payment.
9 South Front street, Philadelphia.
Models and samples of all the different kinds of Rails, Chairs, Pins, Wedges, Spikes, and Splicing Plates, in use, both in this country and Great Britain, will be exhibited to those disposed to examine them. d7imeowr

LOCOMOTIVE ENGINES.

THE AMERICAN STEAM CARRIAGE COMPANY, OF PHILADELPHIA, respectfully inform the public, and especially Railroad and Transportation Companies, that they have become sole proprietors of certain improvements in the construction of Locomotive Engines, and other railway carriages, secured to Col. Stephen H. Long, of the United States Engineers, by letters patent from the United States, and that they are prepared to execute any orders for the construction of Locomotive Engines, Tenders, &c. with which they may be favored, and pledge themselves to a punctual compliance with any engagements they may make in reference to this line of business.
They have already in their possession the requisite apparatus for the construction of three classes of engines, viz. engines weighing four, five, and six tons.
The engines made by them will be warranted to travel at the following rates of speed, viz. a six ton engine at a speed of 15 miles per hour; a five ton engine at a speed of 18 miles per hour; a four ton engine at a speed of 22 1/2 miles per hour. Their performance in other respects will be warranted to equal that of the best English engines of the same class, with respect not only to their efficiency in the conveyance of burdens, but to their durability, and the cheapness and facility of their repairs.
The engine will be adapted to the use of anthracite coal, pine wood, coke, or any other fuel hitherto used in locomotive engines.
The terms shall be quite as favorable, and even more moderate, than those on which engines of the same class can be procured from abroad.
All orders for engines, &c. and other communications in reference to the subject, will be addressed to the subscriber, in the city of Philadelphia, and shall receive prompt attention.
By order of the Company,
WILLIAM NORRIS, Secretary.

December 24, 1833.
For further information on this subject see No. 49, page 778 of this Journal.

STEPHENSON.

Builder of a superior style of Passenger Cars for Railroads.
No. 264 Elizabeth street, near Blocker street,
New-York.
RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part of the New-York and Harlem Railroad, now in operation.
J35 if

RAILROAD CAR WHEELS, BOXES AND OTHER RAILROAD CASTINGS.

Also, AXLES furnished and fitted to wheels complete at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscriber at Paterson, or 60 Wall street, New-York, will be promptly attended to. Also, CAR SPRINGS.
Also, Flange Tires turned complete.
J8
ROGERS, KETCHUM & GROSVENOR.

NOVELTY WORKS.

Near Dry Dock, New-York.
THOMAS B. STILLMAN, Manufacturer of Steam-Engines, Boilers, Railroad and Mill Work, Lathes, Presses, and other Machinery. Also, Dr. Non's Patent Tubular Boilers, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited. m18



INSTRUMENTS.

SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

EWING & HEARTZ, at the sign of the Quadrant, No. 53 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude.
For proof of the high estimation on which their Surveying instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewing & Hertz.—Agreeably to your request made some months since, I now offer you my opinion of the instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.
It is with much pleasure I can now state that notwithstanding the instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all instruments are liable. They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.
I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require instruments of superior workmanship.
JAMES P. STABLER,
Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' instruments of your Manufacture, particularly Spirit Levels, and Surveyors' Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.
These instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.
WILLIAM HOWARD, U. S. Civil Engineer.
Baltimore, May 1st, 1833.

To Messrs Ewing and Hertz.—As you have asked me to give my opinion of the merits of those instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming acquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprise so well merits, I remain, yours, &c.
B. H. LATROBE,
Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them upon application, to any person desirous of perusing the same. m18

TO STEAMBOAT COMPANIES.

PROFESSOR RAFINESQUE, of Philadelphia, offers his services to render steamboats incombustible, and not liable to sink, even by the bursting of boilers, or striking against snags, sawyers and rocks. This will save many boats, much property, and the lives of hundreds every year. Those who neglect this easy improvement, deserve to be neglected and deserted by the public as unmindful of safety. Apply, post paid.

TOWNSEND & DUFFEE, of Palmyra, Manufacturers of Railroad Rope, having removed their establishment to Hudson, under the name of *Duffee, May & Co.* offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J. B. Jervis, Esq. M. & H. R. Co., Albany; or James Archibald, Engineer Hudson and Delaware Canal and Railroad Company, Carbondale, Luzerne county, Pennsylvania.
Hudson, Columbia county, New-York; }
January 29, 1833.

ALBANY SEED-STORE AND HORTICULTURAL REPOSITORY.

The subscriber having resumed the charge of the above establishment, is now enabled to furnish traders and others with FRESH GARDEN SEEDS, upon very favorable terms, and of the growth of 1833, warranted of the best quality.

The greatest care and attention has been bestowed upon the growing and saving of Seeds, and none will be sold at this establishment excepting those raised expressly for it, and by experienced seedsmen; and those kinds imported which cannot be raised to perfection in this country; these are from the best houses in Europe, and may be relied upon as genuine.

It is earnestly requested whenever there are any failures hereafter, they should be represented to the subscriber; not that it is possible to obviate unfavorable seasons and circumstances, but that satisfaction may be rendered and perfection approximated.
Also—French Lucern, White Dutch Clover, White Mulberry Seed, genuine Mangel Wurtzel, Yellow Locust, Ruta Baga, and Field Turnip Seeds, well worth the attention of Farmers.

W. THORNBURN,
347 N. Market st. (opposite Post Office.)

Catalogues may be had at the Store; if sent for by mail, will be forwarded gratis. Orders solicited early, as the better justice can be done in the execution.

* Mr. Thornburn is also Agent for the following publications, to wit:—

NEW YORK FARMER and American Gardener's Magazine; MECHANIC'S MAGAZINE and Register of Inventions & Improvements.

AMERICAN RAILROAD JOURNAL and Advocate of Internal Improvements; and the

NEW-YORK AMERICAN, Daily, Tri-Weekly, and Semi-Weekly; either or all of which may be seen and obtained by those who wish them, by calling at 347 North Market street, Albany.

SURVEYORS' INSTRUMENTS.

Compasses of various sizes and of superior quality, warranted.

Leveling instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by
E. & G. W. BLUNT, 154 Water street, corner of Maiden lane.

ENGINEERING AND SURVEYING INSTRUMENTS.

The subscriber manufactures all kinds of instruments in his profession, warranted equal, if not superior, in principle of construction and workmanship to any imported or manufactured in the United States; several of which are entirely new; among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy—also, a Railroad Geolometer, with two Telescopes—and a Levelling Instrument, with a Geolometer attached, particularly adapted to Railroad purposes.
WM. J. YOUNG,
Mathematical Instrument Maker, No. 9 Dock street, Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested:
Baltimore, 1830.

In reply to thy inquiries respecting the instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad. I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable.

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Geolometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sights, leaves the engineer scarcely anything to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to later angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying out rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,
JAMES P. STABLER, Superintendent of Construction of Baltimore and Ohio Railroad.
Philadelphia, February, 1833.

Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors.
E. M. GILL, Civil Engineer.

German town, February, 1833.
For a year past I have used instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.
HENRY R. CAMPBELL, Eng. Philad.,
German and Norristown Railroads.

m18

FOREIGN VARIETIES.

Chinese Mode of Computing.—The Chinese method of computing is by a kind of abacus, which they call a *Suampuan* "counting board." It consists of a frame of wood, of various sizes, divided into two, unequal compartments, by a bar placed crosswise at about one-third the length from the top. Through this bar, at right angles, are inserted a number of parallel wires, and on each wire, on the lower compartment, are five moveable balls, and in the upper two. These wires may be considered as the ascending and descending powers of a numeration table, proceeding in decimal proportions; so that if a ball on any of the wires in the larger compartment, be placed against the middle bar, and called unity or one, a ball on the next wire above it will represent ten, and one on the next one hundred; so, also, a ball on the next lower, one hundredth; and the balls on the corresponding wires in the smaller compartment will, in the same manner, represent five, fifty, five hundred, five hundredths, &c. the value or power of each of those in the smaller division, being always five times as much as those in the larger. In China almost every trade has a distinct system of secret numbers, that is, instead of using the proper characters for designating prices, they adopt other characters, by which they arbitrarily express their meaning, so as to be understood only by persons of the same trade.—(From Montgomery Martin's History of the British Colonies, Vol. I., Asia.)

Mr. Picken.—Mr. Andrew Picken, the author of the *Dominie's Legacy*, and other popular works of fiction, whose premature loss we mentioned with regret several weeks ago, had prepared for the press before he began his last published work, *On the Legends of Ancient Families*, an historical novel, called the *Black Watch*, which has since been published by his son. It is, we have heard, the only legacy which, at his unexpected death, the author could leave to his orphan family, and, though a great addition to his own literary reputation, can only be made productive as a pecuniary inheritance to his children by the favor of the public. We ourselves have neither space nor time to enter upon a detailed examination of its merits, but we can safely recommend it as one of the most interesting and graphic specimens of the kind of composition to which it belongs. It is founded on the history of the first raised Highland regiment, (called the Black Watch, afterwards the 42d), which was marched from Scotland to London in 1743, and which mutinied, on being ordered, contrary to its engagements, to proceed to the colonies. The author's minute knowledge of the Highlands of Scotland and of the Highland character, joined to his assiduous study of the manners, political sentiments, and social condition of the south at that epoch, has cast the air of historic truth round one of the most powerful and pathetic fictions which has recently appeared. Those who have perused the former works of the author will easily give the preference to the *Black Watch* above them all, though its reader had not, in addition, the melancholy satisfaction of assisting his bereaved and disconsolate family.

[From the Morning Herald.]

It would seem, from what took place, last week at the Westminster Sessions, as well as on a previous adjournment-day, that the game of "Cheating the Justice" is not confined, as might have been imagined, to the low tap-rooms of the metropolis, but is actually played upon, and acted in the presence of their Worshipships themselves. We allude, as most of our readers must be aware, to the truly farcical and disgusting proceedings relative to the indictment against a gang of gamblers in St. James's, who appear to have "Cheated the Justice" in the most open, barefaced manner, and that without in any degree exciting the smallest Magisterial ire, while all that the parish of St. James gets by the prosecution is a heavy lawyer's bill to pay, and the mortification of being laughed at for their pains. It is very easy for professional persons probably to define, and, after their manner to justify the quirks and quibbles by means of which this disreputable result of a criminal proceeding is brought about; but to plain apprehensions it admits of but one solution, and that is, that persons having money enough know how to purchase the means of extrication from the maze in which the less fortunate, in point of wealth, find themselves irredeemably involved. This, we regret to say, has been, at all times, from the imaginary age of *Peckham* and *Lockit*, and probably long before it, down to our own, but too frequently the case. On the occasion in question the process is described to have been a very simple one—viz., witnesses who were bound in recognizances of 20l. each to appear, were paid 100l. each to stay away, which amounted

to a premium of 400 per cent. in addition to an exemption from exposure, and from that badgering which they naturally enough expected to undergo. But we put it to the good sense of those who have the regulation of such matters, whether such a state of things should be allowed to exist, as that one of the most offensive and audacious of crimes should thus be allowed to purchase for itself impunity, and the solemn finding of a Grand Jury be thus rendered nugatory and ridiculous? There is, at least, we should imagine, one very obvious way of lessening this chance of escape by taking much higher recognizances for appearance. In answer to this we shall probably be reminded of excessive bail being contrary to Magna Charta and the Bill of Rights; but, strictly speaking, bail was never contemplated after the finding of a Grand Jury, and both policy and justice require that in such cases the trial should be immediate, or, if postponed to accommodate the accused, should be upon security at least commensurate with the punishment if found guilty; and what is 20l. to the keeper of a modern hell, who frequently clears by his system of plunder 1000l. at a sitting? But if the law, as now administered, is not found strong enough to reach this growing and frightful evil, is it not high time that it was rendered so? We are not great admirers of the summary powers invested in Magistrates—at least to the extent to which in modern times they have been carried, and should be therefore slow to counsel their extension; but, feeling as we do, how much the general welfare is compromised in the continued existence and increase of the description of houses so aptly termed "hells," in this metropolis, we should certainly say that the same power which can consign a mere suspected person to imprisonment, without trial, might be permitted to deal in some such summary way with those open public robbers, and corrupters of public morals. This, however, is merely upon the presumption that the law, as it now stands, cannot be made available for that purpose. This impression we rather gather from the result than from our own conviction of its unavoidableness. For ourselves, we greatly doubt the earnestness of those who have hitherto taken it in hand. Justice, they say, is blind, and "blindman's buff" may only be another name for "Cheating the Justice."

Each Nation a Distinct Skull.—While traveling in foreign countries I made a collection of the skulls of different nations, (the greater part of the collection I had the pleasure of presenting to the Asiatic Society Museum, at Calcutta, where they may now be seen,) and it is exceedingly curious to observe what a marked configuration the crania of diverse people exhibit, even among nations with scarcely a perceptible natural boundary between them. The most striking example noticed was the difference between the Bengalee and the Burmese; the skull of the former possesses a greater occipital protuberance than that of any people I have ever met, it is, in fact, semiglobular, and the whole skull extraordinarily small, divested of any angular or rugged projections, and of remarkably thin laminæ; (these observations are founded on examinations of hundreds of the Bengalee skulls;) the cranium of the latter (Burmese) possesses what I have never found in any other nation—a perfectly flat occipital bone, so much so, that any Burmese skull will rest on a broader and firmer base when placed with the face upwards, than any other position. As if to compensate for the flatness of the occipital bone, the parietal or side walls of the skull bulge out in an extraordinary manner; the brain case (unlike the Hindoos) is very large, and the lining extraordinary thick.—Among my Burmese specimens were the mutilated skulls of Burmese soldiers, found near Rangoon, some of which were clove in twain by the prowess of British soldiers.—[From Montgomery Martin's History of the British Colonies.]

VOL. III. OF THE RAILROAD JOURNAL AND ADVOCATE OF INTERNAL IMPROVEMENTS is published once a week in quarto form, with 16 pages to each number, at \$3; or in semi-monthly form, of 32 pages, stitched in a cover of colored paper, at \$4 per annum, in advance. The first and second volumes of the Journal may be had in two parts to the year, either stitched in covers or bound in boards, at the subscription price, with price of binding, in one part, 50 cents, in two parts \$1 per volume. Those in covers may be sent by mail to any part of the country, the same as a magazine. Published at No. 35 Wall st., New-York, by D. K. Minor, Editor and Proprietor.

THE MECHANICS' MAGAZINE AND REGISTER OF INVENTIONS AND IMPROVEMENTS is now just commencing its second year. It will

be continued in a manner altogether superior to that of the first year. It has drawn forth many valuable correspondents, in different parts of the country, with the assistance of whom, and those who may hereafter contribute to its columns, together with the ability of Mr. JOHN KNIGHT, formerly, and for several years, proprietor and publisher of the LONDON MECHANICS' MAGAZINE, who is engaged as Editor, the proprietor has no hesitation in saying that it will be found worthy of an extended circulation and a liberal support. The first year, or two first volumes, having been stereotyped, may now be had either in numbers, or bound in boards—either at wholesale or retail. Price \$1 50 per vol. in numbers, or \$1 75 in boards, or \$3 per annum. A liberal discount made to the trade. Published by the proprietor, D. K. MINOR, at No. 35 Wall st. N. Y.

THE NEW-YORK FARMER AND AMERICAN GARDENER'S MAGAZINE, has commenced the second volume of a new series. It is published once a month, in quarto form of 32 pages to each monthly number, at \$3 per annum in advance. The last volume may be had either stitched in a cover, so as to be sent by mail, or in boards. Price, stitched, \$3 25; in boards, \$3 50. Each subscriber who pays in advance, or previous to the first of April, free of postage or commission, will be entitled to eight additional pages to each monthly number, or 96 extra pages to the volume. Published at No. 35 Wall street, N. Y. D. K. MINOR, Proprietor. Jan. 22, 1834.

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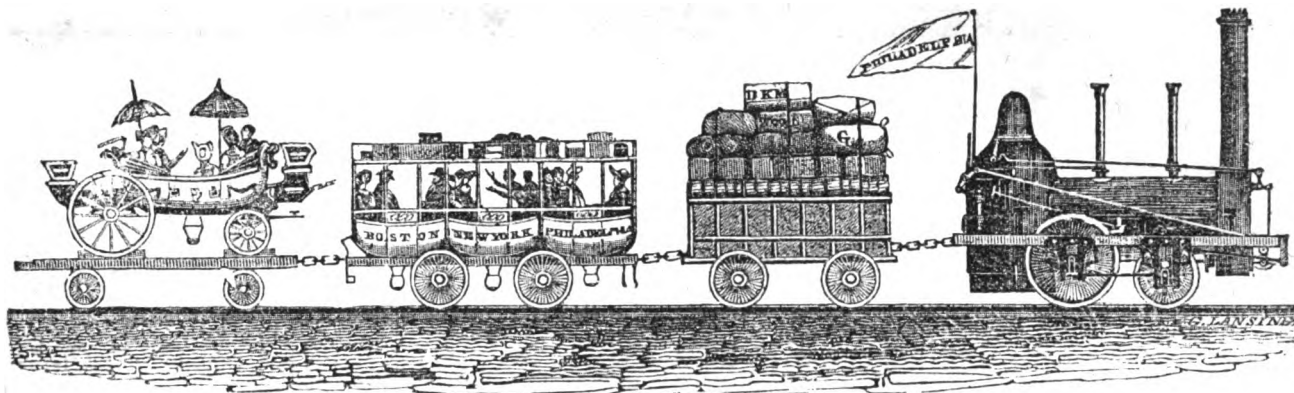
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AMERICAN RAILROAD JOURNAL, AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT No. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, Editor.]

SATURDAY, APRIL 12, 1834.

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AMERICAN RAILROAD JOURNAL, & c.

NEW-YORK, APRIL 12, 1834.

We publish the following letter from our esteemed correspondent and friend, E. L. Miller, Esq., of Charleston, S. C.

D. K. MINOR, Esq.:

Dear Sir,—I send you enclosed, the amount of my subscription for the Railroad Journal for the current year, and as it may not be altogether uninteresting to you, annex a brief statement of the performance of a locomotive steam engine, recently built under my direction by Mr. Baldwin, of Philadelphia, and now running on the Charleston and Hamburg Railroad. She started from Aiken, 120 miles from Charleston, on Thursday morning last, at 15 minutes past 7 o'clock, with 11 cars loaded with cotton; at Blackville, 90 miles from Charleston, another load was added; at Midway, 72 miles from Charleston, 2 others were added; and at Branchville, 62 miles from Charleston, a fourth load was added—making in all a train of 15 loaded cars. This immense weight, not less than 80 tons, including engine and tender, was delivered in Charleston, at 7 o'clock 15 minutes, in the evening of the same day, notwithstanding delays on the road, at the different stations, of $4\frac{1}{2}$ hours—making the running time $7\frac{1}{2}$ hours only, for the distance of 120 miles. Numerous ascents of 20 to 35 feet per mile, were overcome with this load, and what is of most importance to those interested in railroads, is, that the greatest weight on either wheel of the engine does not exceed $1\frac{1}{2}$ tons. Respectfully, yours,

E. L. MILLER.

THE RAILROAD.—A single track of the railroad between this city and Columbia was finished last week, and on Sunday the first horse car arrived from the latter place. On Monday, three horse cars with passengers, left this city, and arrived at Columbia [distance about

11 miles by the railroad] in an hour and a quarter. Yesterday the locomotive, with its tender, and four passenger cars in train, started from the depot in Chesnut street, to make the first trip with steam power.—[Lancaster (Pa.) Examiner, April 3.]

[From the Baltimore American.]

The Legislature of Louisiana, which has just adjourned, adopted a very severe, and, we trust, efficient law for the regulation of steamboats, so as to secure them from explosion. The number of fatal accidents on the Mississippi—particularly the disastrous one by which Senator Johnston lost his life—imperiously called for some legislative interference to secure care and fidelity in the management of engines, and every practicable assurance of their soundness. The new law manifests great anxiety to establish minute precautions against accident, as well as misconduct, and imposes heavy penalties on the agents and owners in every case of damage, which any possible care might have prevented. To make the law more effective, it has been sent to the Executive of all the States bordering on the Mississippi, and its tributaries, for similar action.

The law establishes the office of State Engineer for the port of New Orleans. The duty of the engineer is to examine, once in three months, the strength of the boilers of steamboats plying within the waters of the State; to test them by hydraulic pressure to three times the weight of steam they may be supposed capable of carrying; and to furnish each boat with a certificate specifying the weight of steam which may be safely used.

In case any accident happens on board any boat, not possessing the proper certificates, neither captain, owner, nor agent, can recover any claim for freight or insurance; the owner or agent is made responsible to the shipper, to the full amount of all damage, and the captain is further subjected to a fine, not less than \$500, nor more than \$2000, and to imprisonment for not less than three months, nor more than three years. If lives are lost, the captain is to be adjudged guilty of manslaughter.

The same penalties to the several parties, are provided in case of any accident in navigation, from over loading, racing, carrying higher steam than the certificate allows, or any accident "that may occur while the captain, pilot, or engineer is engaged in gambling or attending to any game of chance or hazard.

The same penalties are provided in case of any accident, from gunpowder, shipped without a written notice of the fact being posted in three conspicuous parts of the boat.

Shippers are made liable to a fine of \$200 for shipping gunpowder, without notice to the master or clerk, and also made liable for danger that may happen by any accident therefrom; and in case of loss of life are adjudged guilty of manslaughter.

In passing on the river, the descending boat is commanded to shut off steam and float down when within a mile of an ascending boat—the latter to assume the responsibility of steering clear of the other, and being liable for all damages.

Other minute directions are given, but the above

form the principal enactments of the law, which appear to be drawn up with a determination to enforce rigorous penalties against any carelessness in the management of steam engines on the Mississippi, within the limits of the State of Louisiana.

THE FARMERS' & MECHANICS' BANK with other Banks in Albany, have, as we hear, taken the Chenango loan of \$900,000 at 6 1/2 per cent. premium for a 5 per cent. stock—irredeemable till 1845.

The following extract, from an English paper, shows some of the important reasoning urged against Railroads. It contains others, also showing their great importance from a source entitled to great credit.

Mr. VIGNOLES addressed the meeting as follows: I present myself before the meeting at the request of the directors of the London and Windsor Railway Company; but I beg that the gentlemen present will do me the favor of expressly understanding that I do not come here in any way connected with them personally. They have called upon me in my professional capacity to lay before them a certain report; with that request I have complied; it is in their hands, and ready for distribution, if they think proper. They consider, however, that it would be more satisfactory, both to this meeting and to themselves, if I would attend here, for the purpose of giving a *viva voce* explanation to many gentlemen who perhaps have not had an opportunity of perusing that report, which I beg the meeting will distinctly understand is simply a professional report, on the comparative merits of two lines of section, I not having seen the contrary, nor having had an opportunity of knowing any of the parties connected with this undertaking, until within the last few weeks. The line of country between London and Bristol consists chiefly of two valleys, the principal one of which is that of the Thames. A bare inspection of the map will at once satisfy any gentleman that Windsor lies in the direct road towards the first principal town where it will become necessary to quit the valley of the Thames; that town is Reading. In fact, it is perfectly well known that any line of road proceeding in this direction, and much more a railroad from London to the western part of England, must pass through Reading. The question, then, was what part of the intermediate country should be included in the line, that through Windsor being in a perfectly straight direction? I am well aware that this was only one of many points of consideration. In arranging a matter of this nature, direction and straightness are no doubt very leading characteristics; but the levels and the expense are other objects requiring no less consideration.

The engineer of the company, Mr. Gibbs, lodged his plan and section in the proper parliamentary office, agreeably to the standing orders of the House of Commons, in which the different levels were specified with great minuteness; the engineer of the London and Bristol Company did the same, and these two Parliamentary sections were sent to me, accompanied by the necessary maps. The maps of which I speak were on a sufficiently large scale to show, with great minuteness, the property of every individual along the projected line of road; and this being a subject with which I am perfectly familiar, I became as well acquainted with the nature of the proposed line of road, from an inspection of the maps, as if I had lived on the ground. I went through the usual necessary calculations, and I can now state, that I have ascertained that in point of levels, in point of expense, and in point of general direction, any railroad from London to Reading ought to pass through Windsor. (Cheers.) There cannot be a doubt of it in a professional point of view. (Hear, hear, hear.) It would only be taking up the time of this meeting unnecessarily if I were to enter into any minute detail. My report has been made, and if the directors, after my looking over it, should deem it advisable to print it for distribution, I am quite willing that my professional reputation should stand or fall by that report. (Renewed cheering.) I have had the honor either of being employed upon or consulted in the progress of almost every railroad of importance which has been sanctioned by the House of Commons during the last eight or ten years; and I am now engaged in the construction of some of the most important that have yet been projected. It is almost unnecessary for me to say, that with the pecuniary question, or the discussion of local interests, I have nothing to do on the present occasion. I have been requested by the directors, however, to add a few popular remarks on the nature of railways in general, which, if the meeting will not consider it obtrusive, I will now subjoin, for the information of those gentlemen who have not had an opportunity of seeing these new modes of communication. (Hear, hear.) A railway, to speak familiarly, is a perfect road. We all know that a level road is the best, and we also know that roads are best in summer, or when they are constantly dry and hard, being then of course easier for travelling. A railway is a road carried to perfection: it consists of bars of iron, supported at intervals on stone blocks, and otherwise so as to form a hard and uniform surface, on which the wheels of the carriage roll, the wheels of the carriages being prevented from running off the rail by means of an angular piece of iron, which was called the flanche. The surface of the country over which the railroad passes is reduced by cuttings and embankments, to a line as nearly horizontal as possible. In the railway from London to Reading through Windsor, this reduction will be such that no elevation will exceed from five to six feet in the course of a mile—that is to say, if the road be constructed upon the plan submitted to me by the London and Windsor Railway Company. (Hear, hear.) The line from London to Reading, through Windsor, is infinitely preferable to that which is projected through Maidenhead, because in some cases the elevations on the latter line of road are as much as 18 feet in a mile. (Cheers.) The road having been levelled is then formed, and the rails, supported, as I mentioned just now, by blocks at intervals of a yard, are placed upon it, and firmly secured, the roadway being well drained. By these contrivances the resistance which a wheel generally meets with upon a road, particularly in bad wintry weather, is reduced in fact to nothing, and by means of peculiarly constructed wheels and axles, the friction there is reduced also, so much so, that a weight or force of eight pounds will, on a good railroad, draw a ton; whereas it requires a force of at

least fifteen times as much to drag the same weight over a common road. We are thus enabled to convey heavy goods, by means of a railroad, at a price which appears to those who are unacquainted with the subject, almost ridiculously small. A charge of three halfpence per ton per mile will pay interest on capital invested in railroads. They are enabled to convey goods at this rate by means of the locomotive engines. On the Liverpool and Manchester railroad the tonnage is only one penny per ton per mile. This, perhaps, will be an answer to those gentlemen who doubt the cheapness of railways in this respect.

Mr. Pocock.—That is more than what that gentleman (Mr. Holdsworth) stated.

Mr. VIGNOLES.—These are the maximum rates on coal. It must be borne in mind too, that upon the Liverpool and Manchester railway there are some severe inclinations—there are two, each of fifty-five feet in a mile. These inclines of course increase the expense of carriage; as the whole quantity of goods have to be lifted as it were up the railroad, in order to attain the upper level. According to the plan of the committee, this part of the expense will be so small in the present instance, that I may venture to say the cost of the company for the conveyance of goods could not exceed, for the moving power, three-eighths of a penny per ton per mile.

Mr. Pocock.—Three-eighths of a penny?

Mr. HOLDSWORTH.—Just a farthing and a half.

Mr. Pocock.—That is considerably more than what Mr. Holdsworth stated. A waggon load of dung will weigh four ton. Now he said that we could have that moved for sixteen or eighteen miles along the railroad for the same expense as we now bear for carrying it three miles. Now, on a common road, I can get that carried three miles for 2s. 6d. (Hear.)

Mr. VIGNOLES.—Yes, and along the railway you could get it conveyed 16 miles for 16d. ("Hear, hear," and laughter.)

Mr. Pocock.—The laugh is against me now, but you will remember that it is not one ton but four; and four times 16d. is 5s. 4d. (Hear, hear.)

Mr. VIGNOLES.—Excuse me, but I don't think you are very likely to find any waggons in this neighborhood which will weigh four tons.*

Mr. Pocock.—Yes, I can. I have seen them many a time at Mr. Ramsbottom's there. ("Hear," and laughter.)

Mr. VIGNOLES.—To return to my statement. I have little doubt either in saying that it is almost as easy and as cheap for a railroad company to carry one thousand passengers as six hundred. Successful as the locomotive engines have been, I fully believe that power to be yet in its infancy, although even now it has been carried to an extent almost incredible to gentlemen who have not had an opportunity of witnessing its effects. Its operation is so familiar to me that it has ceased to be a wonder. Conceive, however, what I myself have seen at Manchester—conceive an engine conveying 200 people at the rate of 20 miles an hour with perfect ease, and ask yourselves if it can be doubted for a single moment that this same tremendous power must speedily be brought into extensive operation in other parts of the country? On the Stockton and Darlington road, before the formation of the railway, there was no traffic at all; by means of the railroad 200 or 300 persons traverse that road every day, who, by a saving of one half the time, and one half the money, enjoy four times the facilities of travelling which they formerly possessed. The establishment of a railway, in fact, must increase the traffic. It is but reasonable to suppose that the man who can travel down to Windsor in an hour, transact all his business, and return home again

* Since the meeting took place, we have been informed by Mr. Vignoles, that the average price of farmers' carting all over England is not less than 6d. per ton per mile.

for one third of the sum he has been in the habit of paying, will visit it three times as often as he used to do. Having made these observations, I will not detain the meeting any further. With reference to details relating to individual landowners, I can give no information whatever, but I shall be exceedingly happy to answer any questions that may be put to me upon the subject of railroads in general. Before I sit down, I have been requested by the committee to state clearly the difference between the line projected by the London and Windsor Committee and that proposed to be adopted by the directors of the London and Bristol Railway. I should say, speaking from the estimate of this company's engineer, which I believe to be perfectly correct, although I have thought it my duty to increase the estimated expense in making my report, that the cost of the railroad between London and Reading, passing through Windsor, would not average more than 13,000l. per mile, while the average expense of a railroad between London and Reading, passing by Maidenhead, would be 25,000l. per mile. (Loud cries of "hear.") I need hardly say that if a railroad can be made at a reduced expense of one-half, the conductors of that railroad can afford to carry goods and passengers for much less than they otherwise could. I, however, as I have already hinted, have increased the estimate of the company's engineer to 16,000l. per mile; which, I believe, will finish it effectually and completely. I have had some experience, and I feel justified in saying that at all events this railroad will cost, taking all its expenses, at the very utmost, 16,000l. per mile, and not 25,000l. per mile. (Hear, hear.) I should also mention that the Bristol Company propose to have a considerable length of tunnel on their line of road, which is always objectionable, but more especially on railways, in consequence of the noxious atmosphere which is necessarily engendered by the locomotive engines in so confined a place, where it cannot be dispelled by an adequate supply of fresh air. The amount of cuttings and embankments, too, according to the plan proposed by the committee, will be very small. I will illustrate this position in rather a striking manner. Between Windsor and Reading the quantity of material necessary to be removed is 400,000 cubic yards; between Ashmill and Reading, via Maidenhead, it is upwards of 2,000,000 cubic yards. (Cheers.) These, gentlemen, are the facts on which I have formed my inferences, these are the grounds on which I have drawn up my report. I have retained the meeting by this statement, with the view of drawing the attention of gentlemen to the subject, and if any of those who are now present would be interested by reading the report in detail, I again say that I can have no objection to its distribution. (Mr. Vignoles resumed his seat amidst considerable applause.)

Mr. VIGNOLES.—Perhaps you will favor us with a list of the failures, sir, and I will answer you. (Much cheering and laughter.)

Mr. PAYN.—It can easily be proved—easily. Certainly, gentlemen, Mr. Vignoles has very eloquently expatiated on the great benefits arising from railroads, but you will have the goodness to recollect he is a superintendent of railways. (A laugh.) The currier says there is nothing like leather; the bug-destroyer prides himself upon his specific for destroying that obnoxious insect, and the superintendent of railways tells you that railroads are very excellent things. It is all very well, but I do not think it any reason why we should have our lands cut through.

Mr. VIGNOLES.—I was not aware when I was expressing what I considered to be an impartial opinion as to the comparative merits of two lines of road, that I should draw down upon myself such an animadversion as the gentleman sitting on the green cloth (Mr. Payn) has cast upon me.

Mr. PAYN.—No, no.

Mr. VIGNOLES.—I beg your pardon, sir, you have been pleased to call me an inspector of railways. Now, I have the honor of being a civil engineer, in considerable practice, and it is all the railroads in the kingdom went to the bottom of the sea to-morrow, I should have quite enough to do; I have been told, too, that if this projected railroad is proceeded with there are some gentlemen who would lose some very good situation or other. (Much laughter and cheering.)

Mr. Pocock.—I don't know anything about situations. If you take my land away, I can't farm it.

Mr. VIGNOLES.—Now, with respect to the 44 acts of Parliament which the same gentleman (Mr. Payn) has alluded to, I beg most decidedly to dissent from his statement. There may have been some 44 acts for the establishment of tramroads, which were in vogue some 30, 40, or 50 years ago, which have gone to decay, and have been ruinous speculations, simply because they proceed on erroneous principles; but it is quite clear that all those modern constructions which we call railroads, which are adapted to the use of the locomotive engines (and those I more particularly advocate), have been quite successful, so far as the experiment has yet been tried, particularly the Liverpool and Manchester Railway, which was opposed, as I believe the hon. gentleman very well knows, tooth and nail by every land owner, on the ground that the railway would injure their interests. That railway, however, having been obtained—ay, in spite of their teeth, is so far successful that another railway establishment between Liverpool and Manchester is now about to be projected, and it is generally understood under the patronage of the very same landed proprietors who combined and conspired, I would say, against the former one. With respect to the number of railroad acts that have been passed I can undertake to say that there are not above six or seven which relate to these modern railroads. The Stockton and Darlington was the first public act: that was successful, and 1000 shares in that company are now selling in the market for 300l.; and shares in the Liverpool and Manchester railway, originally of the value of 100l., are now worth 200l. With reference to others, all I can say is, that they are selling at respectable premiums. Upon the subject of the patronage of his Majesty's government, all I can say is, that I had the honor of speaking to a member of the ministry on Monday last on the subject, and that so far from the government feeling any opposition to railways, its members individually are decidedly in their favor. (Hear, hear.) I speak of them in their individual capacity, because it would be contrary to parliamentary practice if they afforded any one an opportunity of explaining their sentiments as a body on such a subject, for it is a part of the admirable spirit of the English government to let capital fight its own way, it being well understood that English enterprise and speculation, when left to itself, exerts itself in a manner which is most beneficial for the country at large. Before I sit down, perhaps I may trouble the meeting with one more observation, to which I more particularly beg the attention of landholders—viz. the effect of railways in reducing the poor-rates. (Hear, hear.) Along the whole line of road between Liverpool and Manchester, a very large sum is contributed by the company towards the poor-rates, so much so that a reduction of them to the extent of 25 per cent. has taken place in one parish alone. (Cheers.) At all events, the proprietors of this railway, which is 30 miles in length, pay nearly 4,000l. a year for poor-rates in the various parishes through which that line of road passes. (Renewed cheers.)

Mr. Pocock.—Will you have the goodness to tell us, sir, how they are assessed?

Mr. VIGNOLES.—In proportion to their profits, according to the beneficial enjoyment—in

the same manner as canal companies, I have again to beg pardon of the meeting for intruding upon their attention a second time, but really when a professional gentleman attends for the purpose merely of giving an explanation, he being personally indifferent to the success of either scheme, it is rather hard that his conduct should be animadverted upon as mine has been. I am as much interested in the success of canals as I am in the well-being of this species of undertaking. I have the honor of being consulted upon the navigation of one of the most important rivers in Ireland, and with the management of various public works—such as bridges, docks, and canals, and therefore I say again, I am not dependent on railways. (Cheers.)

Mr. Pocock.—You have said that the landed proprietors are all in favor of a second rail-

way between Liverpool and Manchester. Is it for the improvement of their land, or the investment of capital, in the hope of getting a profit?

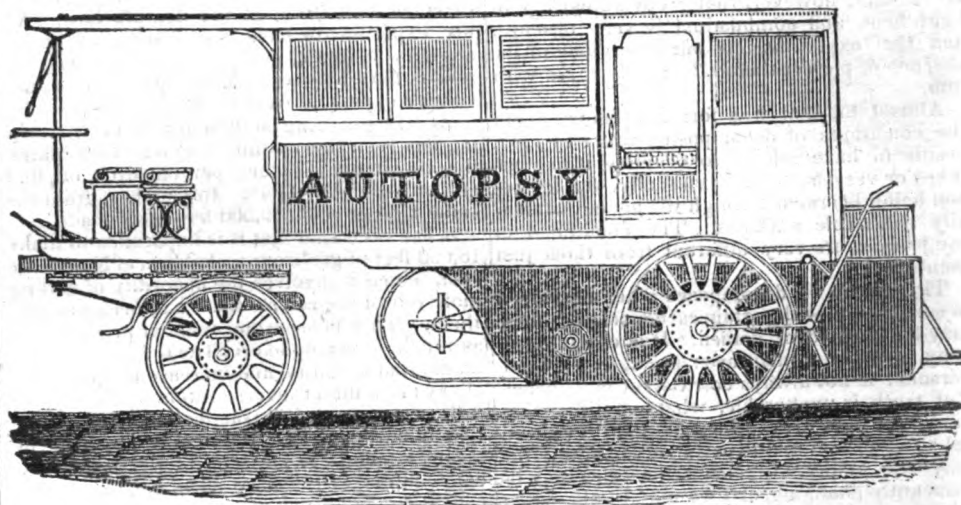
Mr. VIGNOLES.—In either case it showed their conviction that they could not pursue a better course, and that a railway could not do them any harm. (Hear.)

Mr. Pocock.—As you are so scientific, I should like to know how a railway improves the land?

Mr. VIGNOLES.—By affording facilities for the conveyance of goods to and from market.

Mr. Pocock.—We have got them already—I have for one.

Mr. VIGNOLES.—Then, all I can say, sir, is, that you are more fortunate than your neighbors.



HANCOCK'S STEAM-CARRIAGE "AUTOPSY."—We give an engraving of Mr. Hancock's last new steam-carriage, the "Autopsy,"—the same which performed the journey to Brighton and back, with so much success, about three weeks ago, and which has been running daily, during all the present week, between Finsbury square and Pentonville. We have witnessed its performances repeatedly, both as passengers and as lookers-on—and only re-echo the general opinion, when we say that it works admirably. The machinery, which is constructed on the unproved plan, for which Mr. Hancock's last patent was taken out, will be found fully described in a subsequent communication from Mr. Hancock himself.

The quantity of coke expended in each journey of (about) two miles, scarcely exceeds a bushel; so that even supposing the wear and tear were to be as great as in the case of Mr. G. Stephenson's engines on the Liverpool and Manchester Railway, or even twice or thrice as great, the returns from such a carriage, running between the City and Pentonville or Islington, must be sufficiently ample to afford a very handsome profit. According to the following calculation, with which we were favored by a fellow-passenger, there would be a clear gain, during a period of 365 days, of nearly cent. per cent.

CAPITAL REQUIRED TO BE INVESTED.	
Cost of steam-carriage	£700
Spare ditto, to use when the other is under repair,	700
	£1,400
Dr.	
Wages—engineer 40s. per week, steers-	
man 30s. assistant 20s.	£234
Repairs	150
Tolls 4d. each journey × 12 × 365	73
Coke 6d. per journey × 12 × 365	109
Water	50
Rent of coach office and coach house	100
Clerk	50

Premium to the patentee, at the rate (say of 1d. per passenger) 12 × 24 × 365	438
Reserve Fund to replace carriage when worn out—probably in 3 or 4 years	175
	1,452
Dividend of £84 on £1,400	1,176
	£2,628

Cr.
By twelve journeys per day, and twelve passengers each way, at 6d. each, 12 × 24 × 365, - - - - - £2,628
[London Mechanics' Magazine.]

Mr. Rutter's New Mode of Generating Heat—Successful Application to Gas Works. [From the London Mechanics' Magazine.]

SIR,—I beg you will not impute my long-continued silence to any other cause than incessant occupation during the last three months. I am not indifferent to the opinions of some of your correspondents, nor am I insensible to the kind wishes which have of late been expressed towards me, in reference to my process for generating heat.

To dislodge prejudice is no easy task, especially when it has become venerable by age, or respected through the influence of great names. Truth will eventually prevail; but its progress bears no analogy to that of the glowing meteor. May it not rather be compared to the twilight of the morning, that melts imperceptibly into the dawn of perfect day?

It was once the fashion, I believe, to devise ingenious theories, and then endeavor to make practice conform to those theories. This seems to have been beginning at the wrong end. A more natural process is now adopted,—a process in which experiment supplies the materials for constructing theories and illustrating first principles.

Arrangements have accumulated so heavily upon me that I scarcely know where to commence. If I pass over any of the observations of your

correspondents which appear justly entitled to notice, I hope you will believe the omissions are unintentional. Until Colonel Macerone (No. 529, page 453,) republished his letter of November 25, 1826, I was wholly unacquainted with his views respecting the use of liquid fuel. I do not remember that I had ever seen, or heard, or read, anything relating to the subject until the summer of 1832, and then my information extended no further than that coal tar was employed in heating gas retorts.

Mr. Cheverton (No. 531, page 28,) first made me acquainted with the name of Morey, whose 'American water burner' was very kindly and opportunely described (No. 533, page 52,) by Mr. W. H. Weekes. That experiment was new to me. I have since tried it, but, I must confess, without any perception of its being rendered "applicable, in many cases, in place of a furnace."

Mr. Cheverton implies a doubt as to the possibility of decomposing water economically. He admits, however, that "our knowledge of light, heat, and combustion, is very obscure, and that experiment is our best guide in the absence of perfect theory." I fully agree with him.

Almost all that was formerly known about the conditions of decomposing water by heat, seems to have related to effecting it in close tubes or vessels, heated externally, the hydrogen being liberated through the agency of readily oxidizable surfaces. The conditions of my process are very different from those just mentioned.

That water is decomposed when employed in conjunction with certain carbonaceous fluids, may be doubted or denied. It is one thing to deny, another to disprove: seeing, with some persons, is not always co-existent with belief. But truth is unalterable, whatever differences of opinion may prevail respecting it. In physical science, fact and experiment constitute the only safe guides to theory. Theories may be constantly changing, or they may be altogether false: not so the laws which govern the elements of the material universe. We may be ignorant of those laws, but are they on that account the less uniform and invariable in their results?

Mr. George Bayley (No. 533, page 52,) has my thanks: were he to see my memoranda of last May and June, he would be amused at the coincidence of our views respecting the use of tanks for stowing tar and preserving the trim of vessels. Will Mr. Bayley permit me to set him right in a trifling matter? The specific gravity of coal tar is *greater* than that of water.

The communication of your Salistury "correspondent" was almost a verbatim copy of my own printed statement. I have no intention of interposing between "Correspondent" and "An Old Gas-maker," neither of whom are known to me, excepting in your pages; yet I may perhaps be permitted to say a few words to the latter, in reply to his remarks, No. 537, p. 125.

It never was intended to set forth that 17,100 cubic feet of gas could be obtained from a chaldron of Newcastle coal *only* through the agency of my heating process. It would be mere trifling to say that heat, externally applied to retorts, whatever may be the kind of fuel employed, could materially affect the internal process of distillation. All other conditions being the same, I produce an equal quantity of gas from a given quantity of coal, whether the fuel employed be coal, or coke, coal and coke combined, or coal in conjunction with fluid materials. I will not say that an equal amount of work may be done in the same time, and at the same cost with solid fuel, as with solid and liquid together. In the former case it is more difficult to preserve the same uniformity of temperature than in the latter; and it is impossible, by any ordinary means, to obtain an equal quantity (or intensity) of heat from equal weights of solid and of liquid fuel.

The most startling part of 'Correspondent's' (or rather my statement), in the view of 'An Old Gas-maker,' seems to be that which relates

to the density of the gas. An increased quantity of gas, and at the same time "an increased specific gravity," is "so much at variance with the generally received opinions of the present day," that "An Old Gas-maker cannot but conclude that there must be some error in that part of the statement." I have great pleasure in assuring him that there is not the slightest error. During the week last past, I have made from 31 bushels of Newcastle coal (80 lbs. per bushel,) 40,590 cubic feet of purified gas = 18,036 feet per chaldron = 14,028 per ton. Average sp. gr. 0.535.

These workings may not be in accordance with "the received opinions of the old school." I cannot be answerable for that. Experiment, not opinion, has been my guide. I only exhibit facts as I find them. By experiment I would have it understood that I mean not a mere experiment, which may rather be viewed as an exception than adopted as a rule. The manipulations of the laboratory are very often at variance with those of the manufactory. All my experiments have been conducted in the ordinary course of practical workings, and the results have been verified in the course of successive days, and weeks, and months.

At a neighboring station my mode of working has been successfully adopted. Last March the maximum product per chaldron on that station was 13,000 feet. In October, from the same kind of coal, 16,500 feet were made.

It has been said that it is impossible to make 18,000 feet of gas from a chaldron of Newcastle coal, since it involves the absurdity of getting more out of the retorts than had been put into them. This is assertion without proof, and is as much deserving of credit as the received opinions, that quantity and increase of sp. gr. are always in a direct inverse ratio.

To comfort an Old Gas-maker, I can assure him that the retorts I am now heating, by means which he is pleased to designate 'a new combination of the fiery elements,' are in excellent condition—and the furnaces stand well. The same retorts did almost all the work of the station here, during the last winter.

I am not sure that I have yet attained to the maximum product of gas from a given quantity of coal. After making 18,000 feet per chaldron, I find there are sufficient materials to make probably 4 or 5,000 feet more gas. At present I have no means of appropriating these materials for gas-making economically. With the same retorts, and the same apparatus that I am now working, I required, in Nov. 1832, to produce 46,580 feet of gas, 136 bushels of coal. In Nov. 1833, I have made an equal quantity of gas from 92½ bushels of the same kind of coal.

A question in which every practical gas-maker should feel interested, is, whether it be best to keep up a large fire principally for the purpose of making tar and coke, and ammoniacal liquor, or whether that fire may not be more profitably employed in generating gas?

It would extend this paper beyond all reasonable limits, were I now to enter more fully upon details. It would, moreover, be anticipating the proposed publication, in a different form, of my views and experiments connected with this subject. 'An Old Gas-maker' will, I hope, exercise a little patience; and if I appear to him somewhat slow in my movements, let him remember that I am neither an old gas-maker, nor a gas-maker by profession. All I do in that, or any other department of science, is during the few interstices of leisure that occur amongst more important engagements.

Will Mr. E. Walker, No. 536, p. 107, be so good as to inform the readers of the *Mechanics' Magazine*, by what means he has ascertained that coal gas, when used in close apartments, is a *deadly poison*? Is it absolutely necessary, when this gas is so used, that it should be permitted to escape into the room? What are the properties of the respective products of combustion resulting from purified coal gas and long ten tallow candles?

That I am deeply interested in these questions, Mr. Walker will perceive, when I tell

him that I use gas in my bedroom instead of rush candles. I have done it because gas is cheaper than candles, and much more convenient.

J. O. N. RUTTER.
Lymington, Nov. 27, 1833.

Mr. Rutter's New Mode of Generating Heat.
[From the *London Mechanics' Magazine*.]

SIR,—Mr. Rutter says, with truth, that his invention is never likely to be used where fuel is cheap, for according to his statement, although tar is but three-pence per gallon, it is still dearer than coal, the account standing thus:

4 cwt. 0 qr. 20 lbs. of coke at 25s. per ton,	5s. 2½d.
27½ gallons of tar at 3d.	6s. 10 d.
	12s. 0½d.

And coal may be had at from 7s. to 12s. per ton.

Besides, as the demand for tar increases, so must it increase in value, and thereby operate still further against its general adoption. Then, as regards originality, without wishing to detract one iota from the merit of Mr. Rutter, I think it but right to say that, at the gas-works here, tar has been consumed for some years past, not for the sake of economy, but merely to get rid of it, and, as I take it, in a manner somewhat analogous to that proposed by Mr. Rutter, viz.: over a certain measure of coke are thrown two cans of water, and one of tar; but from the effluvia arising from its combustion, this admixture cannot be used.

In commenting on the new mode of generating heat, Mr. G. Bayley, page 51, has been hurried, by an inconsiderate admiration, to wander far from the truth, and that, principally, through confounding weight for bulk. Want of "stowage" can only be understood to imply want of room, and a chaldron of coal and a chaldron of coke must occupy equal spaces; but as the former weighs 26, and the latter only 18 cwt., "stowage" cannot possibly be found in the same vessel for an equal weight of each. The comparison of volume and weight will therefore stand thus—

	cwt.	qr.	lbs.
A chaldron of coke.....	18	0	0
110 gallons of tar.....	10	3	6
	28	3	6

Which, multiplied by 3, will be equal to 86 cwt. 1 qr. 18 lbs. of coal.

Taking the specific gravity of coke and tar as equal, it gives 1-599 chaldron of the compound, and 3-064 chaldron of coals, or the effective quantities rather less than two to one, instead of three to one, as stated by Mr. Bayley.

As regards stowage, water of course need not be taken into account; but in estimating the comparative cost, 15 or 16 cwt. of water being required for every ton of coke, some allowance ought to be made on account of the labor, &c. necessary to remove it from alongside into the reservoir for supplying the fire. I will take leave of the subject at present, with noticing two minor errors: first, Mr. Bayley states the fluid required is withal of less specific gravity than water; while Mr. Rutter states the tar to be 11 lbs., and water is but 10 lbs. per gallon. Again, in stating the comparative economy, he says, 1½ gallons of tar at 1½d. per gallon, is a 1½d but this is no doubt a press error. Yours, respectfully,

TREBOR VALENTINE.

Application of Mr. Rutter's New Mode of Generating Heat to Steam Vessels. [From the *London Mechanics' Magazine*.]

SIR,—My remarks, in No. 533, page 32, appear to have excited the displeasure of your talented correspondent, Trebor Valentine, on account of my "inconsiderate admiration" of Mr. Rutter's new method of generating heat, which, he says, had led me to wander far from the truth. This is a grave charge, and were it not made by a person in a mask, I might be induced to take it in high dudgeon.

How far I am justly liable to the charge of "inconsiderate admiration" of the process, is known only to myself. Not having a copy of my former letter at hand, I am unable to refer

to the precise terms I then employed; but I have a distinct recollection that my "inconsiderate admiration" was chiefly referable to three points, viz., the saving of stowage, weight, and expense. It so happens that I have had some experience in building and navigating steam-vessels, and may, therefore, without presumption, lay claim to so much practical knowledge as to be qualified to express an opinion upon the desirableness of Mr. Rutter's method of generating heat.

I have often felt the want of convenient stowage for coals, notwithstanding there were many vacant spaces low down in the vessel, each containing a few cubic feet, in which small tanks for coal-tar might have been advantageously placed, but which were either unsuitable or inconvenient for the stowage of coal. The trifling weight of coke, compared with an equal bulk of coal, renders it much more convenient for stowage on board a steamer than coal, as it can be safely and advantageously stowed where it would be highly imprudent to stow coal, on account of its greater weight. Mr. Rutter's plan allows of the division of the fuel into small masses, so that, by due arrangement, it may be stowed in such a way as to lower the centre of gravity, and thus increase the stability of the vessel. Whether I have bestowed "inconsiderate admiration" on Mr. Rutter's plan, in this respect, I leave to you and your readers to decide.

With regard to the diminution of weight, I took Mr. Rutter's data, and, on reference to my former communication, think that it will be found that the difference is 3 to 1 in favor of Mr. Rutter's plan. Even on Trebor Valentine's own shewing, it is 2 to 1, which is sufficient advantage in point of weight to secure the "inconsiderate admiration" of persons like myself, who have found ourselves greatly impeded in our progress by the great weight of the coals we were compelled to take on board to supply the engines. But our "inconsiderate admiration" goes yet farther on this head, because the fluid admits of being stowed away in tanks, fitted to the vacant spaces near the bottom of the vessel, so as to bring the centre of gravity lower down than it usually is in steam-vessels worked with coals in the ordinary manner. This alteration in the centre of gravity would greatly increase the stability of a steamer, and lessen the labor of the captain and crew in trimming her upright when heeled either way, by the shifting of the passengers, or by the pressure of the sails. It is also very desirable to keep the vessel in as nearly the same trim as possible, that the paddle-wheels may act with their maximum effect. Mr. Rutter's plan offers the advantage of being able to dispense with half the weight we are now obliged to carry, and thus offers another attraction to call forth the "inconsiderate admiration" of the captains and engineers of steamboats.

It appears that I have made a blunder as to the specific gravity of the tar, and I stand corrected. I had no intention to misrepresent the fact, but having, as I thought, observed that coal tar floated on salt water, I considered its specific gravity to be rather less.

I took the cost of the tar at 1½d. per gallon. I formerly purchased it at one penny per gallon, and not knowing its present price in large quantities, I thought that I had made sufficient allowance by stating it at three halfpence; and your correspondent, in No. 543, page 211, fully bears me out in my estimate being rather above than below the mark. Why Trebor Valentine should charge me with having wandered far from the truth, I cannot conceive, seeing that, for the purpose of convicting me of an error, he has at least doubled the cost of the ingredients in Mr. Rutter's plan for generating heat. Surely his "inconsiderate" prejudice, or something else, has led him far from the truth here, in order to decry a plan which, to say the least, is worthy of our approbation, for having suggested a method of applying to practical purposes a mode of generating heat which has hitherto been confined to the laboratory of the experimental chemist.

My calculation of the expense was made, as may be seen, upon the data furnished by Mr. Rutter, as to the quantities of fuel required to produce a certain effect. If he has erred in the proportions, my results are erroneous; but from the knowledge which I possessed of the cost of the articles, my impression was, and still is, that he had rather overrated the cost than otherwise.

If the cost of generating heat, upon Mr. Rutter's plan, should prove to be as great as by the present method, yet its saving of stowage and weight is sufficient to call forth the "inconsiderate admiration" of every one who has the charge of navigating a sea-going steamboat.

Trebor Valentine appears to have fallen into a very common error, viz. that if a certain weight must be carried on board a steam-vessel, it is of no consequence where it is put, whether on the deck or low down in the vessel's hold. Every nautical man knows that, with the same weight, a vessel may be either put into a good trim or be rendered utterly unseaworthy, according to the manner in which the weight is distributed, with regard to the centres of gravity and floatation.

It is a source of gratification to find that my views of the utility of the tanks for stowing tar coincide with those of Mr. Rutter; and I shall be glad to find that his plan is in actual operation on board some sea-going steamers; and I hope that you will not fail to give your readers the earliest information, with ample details of the results. To none will the information be more interesting than myself, for, although now unconnected with maritime affairs, I do not cease to feel a lively interest in every thing that relates to navigation and naval architecture. I am, yours, &c.

GEORGE BAYLEY.

RESISTANCE OF FLUIDS TO BODIES PASSING THROUGH THEM.—The following notice has recently appeared of a paper entitled "An Account of a Second Series of Experiments on the Resistance of Fluids to Bodies passing through them," by James Walker, Esq. F. R. S. Civil Engineer; which was read before the Royal Society on June 6th, 1833.

The author, in a paper read to the Society in the year 1827, and printed in the Philosophical Transactions, gave an account of some experiments showing that the resistance of fluids increases in a ratio considerably higher than the square of the velocity, and that the absolute resistance is smaller than had been deduced from the experiments of the French Academy. In the present communication he states the results of his further inquiries on this subject.

His experiments were made at the East India Docks, on a boat twenty-three feet long and six wide, with a stem and stern nearly vertical; one end being terminated by an angle of forty-two degrees, and the other of seventy-two degrees; and the resistance to the boat's motion being measured by a dynamometer. The results are given in tables; and it appears from them that in light vessels sharpness is more important in the bow than in the stern; but that the reverse is the case in vessels carrying heavy cargoes. From another series of experiments the author infers that the resistance to a flat surface does not exceed 1.25 lb. for each square foot, at a speed of one mile per hour; increasing for greater velocities, in a ratio considerably higher than the square of the velocity. The author concludes with some observations on the results lately obtained in Scotland, where great velocities were given to boats moving on canals, without a proportional increase of resistance.—[Proceedings of Royal Society.]

MALT AND TEA.—It is a curious fact, that the consumption of malt in England and Wales has been stationary for nearly half a century, though the population has more than doubled during that period. [McCulloch's Commercial Dictionary, p. 723.] The tables, however, show that the public brewers, since 1787, have contrived to manufacture *one-third more strong beer out of the same quantity of malt!* So that both the quantity and quality of the national beverage have declined. The consumption of genuine tea has also been steadily declining, compared with the population. The sales of the East India Company show that the average consumption per head of *their* teas in 1801, was 1 lb. 13.6 ounces; in 1831, per head, 1 lb. 9.2 oz. showing a decline of full 17 per cent. during the last thirty years. As the fashion of tea-drinking has certainly not declined, it may be concluded, even after allowing for the increased consumption of coffee, either that the decoction has been made weaker, like beer, or that the shops have sold something else in place of the Chinese plant. The numerous convictions of persons having adulterated tea in possession favor the latter conclusion. Monopoly and high duties have operated unfavorably on public morals. "Lovers of tea or coffee," it is truly remarked, "are rarely drinkers;" and Raynal ascribes the sobriety of the Chinese to the use of these grateful beverages, which produce all the good, without the evil consequences, of more powerful stimulants.—[History of the Middle and Working Classes, second edition.]

METEOROLOGICAL RECORD, KEPT AT AVOYILLE FERRY, RED RIVER, LOU.

For the month of February, 1834.—(Lat. 31.10 N., Long. 91.59 W. nearly.)

Date.	Thermometer.			Wind.	Weather, Remarks, &c
	Morn'g.	Noon.	Night.		
1834.					
Feb'y 1	32	54	50	calm	clear—white frost—clear all day and night—Red River rising
" 2	31	57	54	"	" " " " " " " "
" 3	38	66	60	"	" " " " " " " "
" 4	41	70	58	"	" " " " " " " "
" 5	46	74	61	"	" " " " " " " "
" 6	50	74	43	"	" " " " " " " "
" 7	51	72	68	"	" " " " " " " "
" 8	60	72	69	"	" " " " " " " "
" 9	54	66	63	"	" " " " " " " "
" 10	47	74	68	"	" " " " " " " "
" 11	50	73	64	"	" " " " " " " "
" 12	50	77	71	"	" " " " " " " "
" 13	50	76	70	s—light	" " " " " " " "
" 14	53	75	72	s—high	cloudy morning—clear day—cloudy morning
" 15	60	51	51	w	" " " " " " " "
" 16	48	51	50	calm	" " " " " " " "
" 17	42	68	61	"	" " " " " " " "
" 18	48	66	63	"	clear—white frost, (light)
" 19	61	66	66	"	" " " " " " " "
" 20	68	71	74	"	" " " " " " " "
" 21	70	78	74	s—light	cloudy—foggy morning—thunder and rain all day and night
" 22	70	78	75	"	" " " " " " " "
" 23	70	74	73	"	" " " " " " " "
" 24	71	76	66	"	" " " " " " " "
" 25	52	54	46	n—high	" " " " " " " "
" 26	42	45	45	n—light	" " " " " " " "
" 27	44	46	45	calm	" " " " " " " "
" 28	45	53	49	"	" " " " " " " "

Red River rose this month 2 feet 3 inches—below high water, 5 feet 6 inches.

CAPACITY OF BODIES FOR WATER.—As it may be interesting to many to know the comparative as well as the positive absorption of water by various bodies, we subjoin the following table, the details of which were made with care. The weight of each substance was ascertained before immersion; next, when the water ceased running and began to drop; and, lastly, when all dropping had ceased, and the bodies were in that state in which they may be supposed to be full of moisture.

	Dry.	Dripping.	Done dripping.
Flannel.....	144 grs.	1553 grs.	700 grs.
Woollen Cloth..	56 "	370 "	191 "
Linen	375 "	2110 "	1050 "
Calico.....	115 "	1150 "	450 "
Cambric Muslin.	95 "	883 "	307 "
Very fine do..	54 "	715 "	297 "
Glove Leather..	106 "	1170 "	677 "
Kid do.	172 "	770 "	481 "
Shoe do.	95 "	194 "	177 "
Sponge.....	185 "	2440 "	2070 "

From these data the following table may be constructed, to show in the first instance the absorbing powers, and, in the second place, the retaining powers, for moisture, of the various bodies thus experimented upon:

Flannel absorbed 11 and retained 5 times its weight of water	
Woollen Cloth 6½	3½
Linen Cloth 5½	3
Calico 10	4
Cambric Muslin 9	3½
Fine Muslin 13	5
Glove Leather 11	6½
Kid do. 4½	2½
Shoe do. 2	2 less a fraction
Sponge 13	11

From these results, it may be seen that, although some substances, in the first instance, take up an equal or nearly an equal quantity of water with the sponge, such as the flannel, fine muslin, and glove leather, yet their powers of retaining the same are very far inferior.

Animal Mechanics, or Proofs of Design in the Animal Frame. [From the Library of Useful Knowledge.]

(Continued from page 196.)

We shall proceed to explain how the knee joint and hip joint, independently of the exertion of muscles, become firm in the standing position, and when at rest; but before we enter upon this, let us understand the much-talked-of demonstration of Borelli, who explained the manner in which a bird sits upon a branch when asleep. The weight of the creature and the consequent flexion of the limbs drawing the tendons of the talons so as to make them grasp the branch without muscular effort.

Fig. 13.

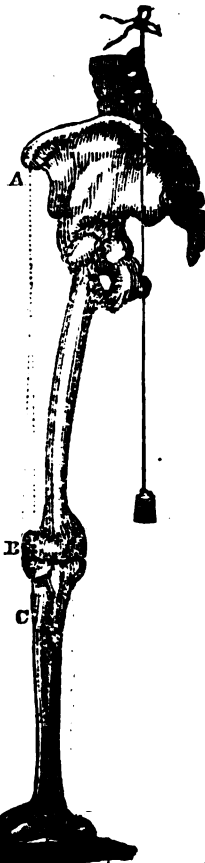


The muscle A passing over the joint at B, and then proceeding to the back of the leg, and behind the joint at C, and so descending behind the foot at D, it extends to the talons; and the weight of the bird bending the joint B and C, produces the effect of muscular effort, and makes the claws cling.

But why should the anatomist have recourse to this piece of comparative anatomy, when he has so fine an example in the human body? And one which is much more interesting, as, in fact, it is the foundation of reasoning upon the diseases and accidents of the limb. If this beautiful arrangement in the healthy and perfect structure of a man's limb be not attended to, it would be easy to prove that many important circumstances in regard to disease and accidents must remain obscure.

The posture of a soldier under arms, when his heels are close together and his knees straight, is a condition of painful restraint. Observe, then, the change in the body and limbs, when he is ordered to stand at ease; the firelock falls against his relaxed arms, the right knee is thrown out, and the tension of the ankle joint of the same leg is relieved, whilst he loses an inch and a half of his height, and sinks down upon his left hip. This command to "stand at ease" has a higher authority than the general orders. It is a natural relaxation of all the muscles, which are consequently relieved from a painful state of exertion: and the weight of the body bears so upon the lower extremity, as to support the joints independently of muscular effort. The advantage of this will be understood when we consider that all muscular effort is made at the expense of a living power, which, if excessive, will exhaust and weary a man, whilst the position of rest which we are describing is without effort, and therefore gives perfect relief. And it is this which makes boys and girls, who are out of health and languid, lounge too much in the position of relief, from whence comes permanent distortion. This figure represents the bones of the leg.

Fig. 14.

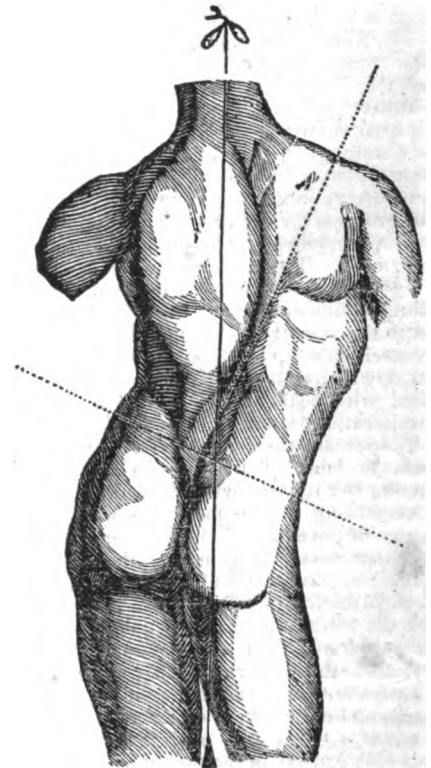


The plumb line shows the direction of the gravitation of the body falling behind the

head of the thigh bone. Now, if it be understood that the motions of the trunk are performed on the centre of the head of the thigh bone, it must follow that the weight of the body in the direction of the plumb line must raise the corner of the haunch bone, at A. From this corner of the bone, a broad and strong band runs down to the knee-pan, B, in the direction of the dotted line. The powerful muscles which extend the leg are attached to the knee-pan, and, through the ligament at C, operate on the bones of the leg, stretching them and preventing the flexion of the joint; but, in the absence of the activity of these muscles, the band reaching from A to B, drawn, as we have said, by the weight of the body, is equivalent to the exertion of the muscles, braces the knee joint, and extends the leg; and we have before seen that the extension of the leg fixes the ankle joint. Thus the limb is made a firm pillar under the weight of the body, without muscular effort.

When the human figure is left to its natural attitudes, we see a variety and contrast in the position of the trunk and limbs.

Fig. 15.

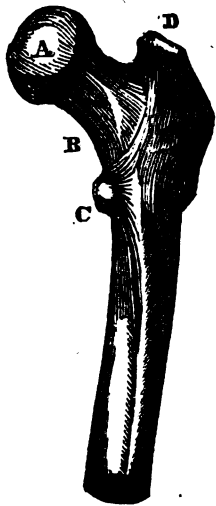


This position of the body resting on the lower extremities throws the trunk into an elegant line, and places the limbs in beautiful contrast, as we see in all the best specimens of sculpture.

Now, that we have understood that the lower extremity becomes in some positions a firm pillar, it is the more necessary to observe the particular form of the head of the thigh bone. (See fig. 16, next column.)

It is here seen that the head of the bone A stands off from the shaft by the whole length of the neck of the bone B; the effect of this is, that, as the powerful muscles are attached to the knobs of bone C, D, they turn the thigh bone round in walking with much greater power than if the head of the bone were on a line with the shaft. They, in fact, acquire a lever power by the distance of D from A, as, during the action of these muscles, the limb is stiff; the rolling

Fig. 16.



of the thigh directs the toe outwards in walking.

When the weight of the body is perpendicular over the ball of the great toe, the whole body is twisted round on that point as on a pivot. This rolling of the body on the ball of the toe, and consequent turning out of the toes in stepping forward, is necessary to the freedom and elasticity of the motion. The form of all the bones of the leg, and the direction of all the muscles of the thigh and leg, combine to this effect. So far is it from being true, as painters affect to say, that the turning out of the toes is the result of the lessons of the dancing master.

A certain squareness in the position of the feet is consistent with strength, as we see in the statues of the Hercules, &c.; but the lightness of a Mercury is indicated by the direction of the toes outwards. In women there would be a defect from the breadth of the pelvis, and a rolling and an awkward gait would be the consequence; but in them the foot is more turned out, and a light elastic step balances the defect arising from the form of the pelvis. Any one may be convinced of this by observing people who walk awkwardly, especially if they walk unequally. Look at their feet, and you will see that one foot goes straight forward, whilst the other is turned outwards, and that when they come upon the straight foot, they come down awkwardly, and have no spring from it.

Observations on the Prevailing Currents of the Ocean and their Causes. [From the United Service Journal.]

There are few branches of science, connected with the phenomena of the surface of the globe, which have hitherto received less consideration than those oceanic currents which every-where prevail more or less in the great body of the waters; and it seems surprising, that in a country situated like our own, and so intimately connected with the element which forms our rampart, as well as the great medium of our wealth and greatness, so little has yet been done to trace this continued circulation to its true and proper source.

Much expectation on this subject was lately excited by the announcement of Major Rennell's work "On the Currents of the Atlantic;" and it was but natural to expect, from the pen of so able and experienced a writer, some elucidation of this hitherto obscure subject. The expectations entertained

as to this posthumous work have in many practical points been fully answered; the *existence* and *effects* of many important currents have been explained in a manner that cannot fail to be highly useful to every practical man. But in tracing the *cause* of this mysterious movement, Major Rennell seems merely to have followed the usual track that had before been taken by all former writers on the subject, and has thus been led to attribute to the *winds*, effects which owe their real origin to the main cause of these very winds themselves.

It has long been known, that the prevailing currents, both in the air and in the waters, have a regular set within the tropics, from east to west; and as atmospheric currents in these latitudes, under the name of the *Trade Winds*, have been justly attributed to the rotatory motion of the earth on its axis, it has been incautiously adopted as a principle, that the currents of the ocean arise from the action of the prevailing currents of wind, both in the tropics and in other parts of the earth.

"The winds," says Major Rennell, "are, with very few exceptions, to be regarded as the prime movers of the currents of the ocean; and of this agency, the trade winds and monsoons have by far the greatest share, not only in operating on the larger half of the whole extent of the circumambient ocean, but by possessing greater power, by their constancy and elevation, to generate and perpetuate currents; and although the monsoons change half yearly, yet the interval during which they continue to blow in each direction is long enough to produce effects *nearly similar to the constant trade winds*;" that is, although the winds do not always blow from east to west, but are, during one half of the year, *north-easterly*, and for the other half, *south-easterly*, yet the currents in the open ocean, within the tropics, are *constant*, from east to west, and thus do not follow the direction of the winds from which they originate. "The winds, then," concludes Major Rennell, "operating incessantly on the *surface* of the ocean, cause, in the first instance, a gentle but general motion to leeward, (as is proved by ships being always to leeward of their reckoning in the trade winds;) and the waters so put in motion form by accumulation streams of currents."—[Rennell on the Currents of the Atlantic, p. 6.]

Setting out, then, upon this principle, in his account of the existing currents of the ocean, as far as they are at present known, it cannot excite surprise, especially if this theory of the origin of the currents can be proved to be erroneous, if many facts are stated in the work of Major Rennell which are utterly at variance with the theory itself; and the consequence naturally is, that, however distinct and instructive the information may be with respect to the individual currents, and the best mode of combatting their influence, we rise from the perusal of the work more than ever uncertain as to the true cause of those remarkable streams which are known, in numerous instances, to run in the very face of the steady and prevailing winds which are here stated to be the occasion of them.

In these observations upon Major Rennell's work, we must not be understood, however, as detracting in any way from the highly useful tendency of it in a practical point

of view, for which it was chiefly intended but we beg to offer a few remarks as an attempt to elucidate this obscure but interesting subject, which, like other questions relating to an extended system, must first be viewed on a great and general scale, before we can safely venture to account for the minor portions of it, which come within our more immediate and personal observation.

It appears strange, that while the aerial currents of the atmospheric fluids within the tropics have been so long attributed to their proper cause, it should never have occurred that the same cause might probably have the same effect upon the aqueous fluids which cover so large a portion of the globe, and that the currents of the ocean might thus be mainly attributed, like the trade winds, to the rotatory motion of the earth upon its axis. The more powerful and constant of the currents of the tropics having a general tendency from east to west, might be supposed likely to suggest this idea. But if suggested, and put to the proof by actual observation on a limited scale, it is probable that the theory would be rejected as inconsistent with the facts, for while the trade winds are found to be in a great degree constant, like the cause which produces them, and only varying a few points to the north or south, according to the season, and the position of the earth with regard to the sun, the streams of the ocean are found to set in various directions, and frequently in *opposition* to the supposed cause; we could not, therefore, feel surprised if some other cause was immediately sought for.

In order, however, to set this point in a proper light, we have only to examine with attention the effects produced by a rapid and rocky descent on the small scale of a river or brook. We here find the general tendency of the stream taking, *as a whole*, a decided course, (say from east to west;) but if we confine our view to the minor parts of this stream, and watch the movements of any small floating substance, as it follows the various eddies and countercurrents occasioned by the rocky impediments in the bed of the river, we shall with difficulty bring ourselves to believe that the general tendency of the whole stream is from east to west, as we frequently find the floating bodies taking a direction from *west to east*, and, at some particular points, even from north to south. This is taking a limited view of what ought to be considered on a wider scale, and may serve as an illustration of what actually takes place when we form a theory for the whole currents of the ocean, by merely observing some particular portions of it.

What takes place in a fluid on a small scale will assuredly occur also on a larger, as both are subjected to the same general laws; and because the trade winds are not so subject to opposition, and consequently to eddies and counter-currents, as the equatorial streams of the ocean, we are not, therefore, to conclude that both fluids are not originally set in motion by the very same cause, for it is obvious that, though their general tendency may be (as indeed it really is) from east to west, the numerous interruptions opposed to a regular movement in that exact direction may often occasion an extensive re-action in a direction to all appearance opposite to it.

Let us for a moment suppose the earth to be a body *at rest*, or at least without rotation

on an axis; and let us further suppose no dry lands to exist above the surface of the waters, with which latter the sphere would thus be entirely covered. Let us also in idea remove its atmospheric envelope, that all friction or pressure may be removed between the two fluids of air and water: what, then, could we expect to find under such an arrangement? We could not look for any circulation in the watery covering, under such circumstances. Every thing would remain in perfect repose; and unless the waters were preserved in purity by some principle not now in existence, they would soon become corrupted and unsuitable to the nourishment of organic life. But let us now suppose a sudden impulse of rotation to be given to the sphere with its fluid covering; and let us consider what would be the effect of the rapid rotatory movement upon the circumambient waters. If a plate or other shallow vessel containing water be impelled in any direction horizontally, the fluid, participating but little in the impulse, is left behind on the spot whence the movement began; it cannot keep pace with the motion of the solid. In the same manner the globe would revolve upon its axis, while the superficial waters would remain nearly stationary, and would have all the appearance of moving in opposite directions, *seeming* to transport floating bodies from east to west, while, in point of fact, the earth was passing them from west to east. Thus we perceive that, in the supposed case which we have now put, the steady movement of the solid ball would be imperceptible, while floating bodies on the surface of the water would visibly become more distant in an opposite direction. This apparent movement would naturally be greatest in the equatorial regions, being the outer rim of the revolving wheel; while towards the axis the waters would be little, if at all, affected by the rotation.

Let us now, for a moment, suppose our globe to be surrounded with its atmosphere, or envelope of fluids of a different nature. Without rotatory movement in the solid, there could be no semblance of regular movement in this aerial fluid, and we could therefore have no trade winds. Other partial winds there would be, it is true, occasioned by heat acting on the elasticity of the air, and by a constant succession of expansion and contraction arising from various degrees of temperature. But if we suppose, as before, a revolving and rapid motion to be given to the sphere thus surrounded with its airy envelope, a similarity of cause would immediately occasion a similarity of effect. The *trade winds* would be produced in the equatorial regions, while the circulation of the atmosphere in the more temperate and frigid latitudes would be carried on by the changes of temperature in the same manner, or nearly so, as if there had been no rotatory motion at all.

The effect of the trade winds, and, by analogy, of the oceanic currents, may be simply illustrated by the example of a well-mounted horseman in a calm day. While he remains still, not a breath of air blows. He moves slowly, but produces little effect in deranging the quiet of the atmosphere. The more rapid his course, however, the more violent will be the *current of air* which seems to blow in his face whichever way he goes; and even in the case of a moderate breeze, he may "outstrip the wind," and make it seem to blow in an opposite direction.

It must be obvious, then, that the effects of the revolving motion of our globe must be the same, both upon the *fluids of the air*, and upon the *fluids of the ocean*, and consequently, that the regular *trade winds*, and the regular *equatorial currents*, proceed each separately from this cause, and would equally exist even in the absence of the other. But it may be urged, that the trade-winds are much more constant to their course than the equatorial currents, and it therefore seems difficult to imagine that they can both proceed from the same cause. The reply to this objection is extremely simple, when we look a little deeper into the nature and circumstances of the two fluids. The atmospheric fluid is above the surface of the solid, and is but slightly deranged by the asperities and interruptions it may have to encounter, in the form of the islands, continents, or mountains of the earth. Some derangement actually does take place, however, from these causes, but it bears no comparison to the counter-currents and eddies which are found in the ocean, arising from the numerous and insurmountable obstacles which are thrown in the way of the regular equatorial streams. In the supposed case, which was before put merely for illustration, we considered the globe to be entirely covered with the waters. Such is not, however, the reality now, although this preternatural effect has certainly existed, on one most memorable occasion, the evident traces of which attest the fact on every part of the surface of the globe. Such is not, however, the usual state of things; on the contrary, the ocean occupies about two-thirds of the whole surface, while the remainder is broken into a thousand dispersed fragments, each opposing its solid form, as the sphere revolves, to the regularity of the oceanic movements. If the smooth and polished wheel of the turner be made to revolve in water, the movement, however rapid, produces little or no commotion in the fluid; but let the polished wheel be changed for one having a toothed or unequal edge, and we shall instantly perceive a very opposite effect. The effects of the paddles of the steamboat on smooth and tranquil waters will also bring this subject home to the mind of every one. We cannot then look for the same regularity of movement in the equatorial currents of the ocean that is perceptible in the equatorial currents of the atmosphere.

AGRICULTURE, &c.

[From the New York Farmer.]

Suggestions relative to Florists' Work for April and May. By the EDITOR.

Although the edible productions of the vegetable kingdom are regarded as the substantial bounties, and flowers as the smiles, of Providence, yet we cannot dispense with the latter. We should seek our bread in sorrowfulness were no flowers strewed in our path. Did we not meet the animated and cheering countenances of our fellow creatures, did we not see much in all our journeying through life, to remind us that more than Eden bowers await those who make their fellow creatures smile, how miserable should we be! How kind is Providence! Though we may not have it in our power either to feed the hungry or to clothe the naked, yet we can all produce that effect on the countenances of others, that is so lovely and beautiful, and so reciprocally cheering to the heart. But alas! how many

are they who despise this blessing; and instead of laboring to diffuse smiles around them, cause sorrow to corrode the heart, and distress to disfigure the countenance. And how many there are, who, like our Father in Heaven, have abundance to feed and clothe, and to smile on others, and yet, alas! unlike Him, do neither. But let us all endeavor to unite our efforts with those of lovely spring, to make all nature smile. This is peculiarly the province of the fair sex.

SOIL.—As a general rule, flowers require a sandy loam, made rich by fermented manures, particularly by rotted leaves or vegetable mould. The ground should be well spaded and rendered as fine as possible. If the seeds are put in pots the soil should be sifted.

SITUATION.—Very few flowers require the sun for any length of time. They succeed better when in a slight shade the greater part of the day, particularly when the heat is most intense. Light and pure air are requisite.

TIME OF SOWING.—From the latter part of April to the first of June flower seeds are put in the ground. The depth, if the seeds are small, should not exceed from one fourth to half an inch. If dry weather is apprehended, a board laid on the drill for two or three days will prevent the moisture from being evaporated. Flower pots are used for the same purpose.

PLAN OF ARRANGEMENT.—Neatness, simplicity, and convenience, should be the characteristics, particularly of small gardens. Ovals and other easy unstudied figures are preferable to squares, diamonds, hearts, and triangles. The plants should be arranged according to their height, so that the high ones do not conceal the others.

PROPAGATION.—Every lady should know how to propagate plants by layers, cuttings, divisions, and offsets. Many of the most valuable plants are increased much more readily by these methods than by seeds.

DOUBLE FLOWERS.—Linnaeus calls these *monsters*, a term very inappropriate, to say the least of it, for such beautiful productions of nature. Most double flowering plants do not produce seed, consequently they are increased by other methods. The less completely double they are, the more seeds they contain. Double flowers are produced by fertilizing half-double varieties, by cutting out the anthers, by fertilizing or crossing with different colors, and by single plants set out among those nearly or quite double. The seeds of these are then sown, which will probably produce some double flowers.

VARIABLENESS OF FLOWERS.—Exposure, culture, soil, &c. have a tendency to vary the color and size of flowers.

CURRENTS.—The currant is one of the most useful of all our small fruits. As soon as their size will answer, they are made into pies, so that they are in use from June until September. They are great and constant bearers, and will grow upon all varieties of soil.

Although the white and red currant are claimed as natives of the Island of Great Britain, yet they flourish much better in the northern part of the United States than they do in that country.

As the currant is useful, the bush may be rendered quite ornamental in gardens, if proper pains are taken with them at first.

Those who are wishing to have a good supply of fruit, and at the same time have their bushes ornamental, should procure as many straight well proportioned sprouts, of the last

year's growth as he wishes to cultivate. Let these be cut off a couple of inches above where they commenced the year's growth, or where the buds become regular; with a sharp pen-knife scallop out each bud beginning at the bottom, and proceeding up, at least one foot, or so far as you wish the stem of your bush to remain clear of limbs. In doing this be careful that not one bud is left, on what is designed to go into the ground, or on what is designed for the body of the bush. Stick the sprouts thus prepared in the ground, either where they are to remain, or they may be set one year in nursery form, and afterwards transplanted. Bushes properly prepared in this manner are as sure to live as those that have roots, and never will sprout from that part where the buds were taken from.

Every one, who has attempted to train a correct bush, as a standard, knows well what a task it is to keep down the sprouts from the bottom, which if left render it very unsightly. When bushes are trained in this way, the tops may be kept open, so as to admit the sun and air, and the currants will not only be larger, but better flavored.—[Goodsell's Gen. Farmer.]

IMPROVEMENT OF WOOL.—How far the farmers of this country may find the following article, from the London Farmer's Magazine, serviceable to them, we are unable to say; but it strikes us that the salve recommended would be beneficial to sheep, if applied after they are sheared.

MR. EDITOR.—From the increasing demand for white wool, many of the store farmers of this country have of late years allowed their flocks, even in high and exposed situations, to winter without a salving of any description whatever. This practice, except in some very peculiar situations, can seldom with propriety be continued above a year or two, as under this treatment both the quantity and quality of the wool invariably fall off, and seldom fails to produce a *hemphy* fleece, or, in other words, the wool gets imbedded with dead white hairs, which renders it only fit to be applied to inferior purposes, and thereby materially reduces the value of the fleece. Various salving mixtures have been recommended and adopted, but in few instances have any of them met with the approbation of the manufacturer; and when it so happens that the wool has been so heavily laid that it cannot be submitted to the process of manufacture without being previously scoured, much labor and expense are thereby incurred, and consequently the price of the wool considerably increased. Wool after having been scoured is much more liable to get discolored during the manufacturing process, and ultimately an article of less purity in color than goods which have been produced from the material as shorn from the sheep's back. Some wool growers, with anxiety to produce a fleece in a very slight degree removed from that which has been allowed to remain perfectly free of any salving whatever, have applied a greasing of animal or vegetable oil, but without the necessary precaution of adding a slight proportion of the refined spirit of tar, consequently the wool is of a yellow tinge, which renders it in a great measure unfit for the manufacture of white goods, and therefore a very considerable depreciation may be said to have taken place on the value of the material, in consequence of the injudicious application of oiling. Several of the most extensive sheep farmers in Peebles-shire, some of them indeed in the very highest and most exposed situations in the county, have for the last two years salved their flocks with powdered crude white arsenic and black soap, in the proportion of one pound of arsenic to three of soap, which are mixed up with seventy bottles of water, and this is considered sufficient for three score and ten sheep, being at the rate of a bottle for each, the expense of which does not exceed sevenpence a score. Of all salving hitherto

used in this county for the producing of white wool, this is allowed to be decidedly the best. The moment it is applied, all vermin of whatever description die instantly, and are never again to be found upon sheep which are salved with this composition; and it is the opinion of some of the most experienced in sheep farming, that stock under this treatment will in a very great measure be exempted from the louping-ill, a disease which kills thousands annually. From the nature and properties of the composition, many of the diseases which unsalved flocks are liable to be infected with, are at once eradicated or prevented by the application of this salve, which also destroys all inclination for rubbing against foggy or grassy banks, and thereby prevents the wool from getting imbedded with impurities, which are not unfrequently found to such an extent, that the wages of the laborer in picking it sufficiently adds so much to the price, that too often the manufacturer is obliged to apply it to an inferior purpose; and even when the material has been carefully looked over by the most discerning eye, previous to its being submitted to the process of manufacture, it frequently happens that thousands of these impurities make their appearance in the finished article, which in a great measure renders it unfit for the purposes for which it was intended. Sheep salved in this manner are seldom or never found to die in consequence of falling awl, or the wool to pell or fall off previous to clipping time. However, in place of soap and water, I would with much confidence recommend that the arsenic should be mixed with butter and cocoanut oil, and only to that extent which is necessary to give fixity to the arsenic, which, with a slight addition of the refined spirit of tar, is a salve which I have no hesitation in pronouncing is calculated to produce wool of the purest possible description. Under this treatment the fleece will not only be considerably finer, but very materially increased in quantity, independent of any additional weight that may be added by the application of the butter and cocoanut oil, and will be found to possess in a much greater degree the felting properties; consequently much more valuable as a clothing wool, or indeed for the manufacture of any description of goods to which the material can possibly be applied. Wool salved with this composition is also admirably adapted for mixing with skin wool, which has been removed from the pelt by the application of lime; and it is a well known fact, that when manufactured by itself, it is extremely liable to gild or get discolored during the hot days of the summer. After the necessary process of oiling has been performed, a very slight admixture of the salve material acts as a complete security against the skin wool getting discolored in the least degree, throughout all the various stages of manufacture; and even in scouring, the quantity of soap generally required would be considerably reduced by adopting the mixing system here recommended.

Your giving a place to the above in your paper will oblige your most obed't serv't, X.

MR. COKE—DEVON CATTLE.—Those who are exerting themselves to improve the husbandry of the country should not, on reading the following remarks of one of the best judges of cattle in England, the Rev. Henry Berry, be discouraged:

It is now about forty-two years since Mr. Coke, very properly considering the difficulties he had to encounter on his light poor soil, began to breed Devon cattle, and it is not a little creditable to his judgment that he has, during that period, scarcely referred to anything which may, properly speaking, be called a cross—certainly, to none of which he could permanently avail himself—and yet his Devons, take them altogether, are by far the best I have

ever seen. I much doubt whether, the county of Devon can produce such an animal as one of Mr. Coke's bulls. I am totally free from prejudice on these matters, and, therefore, candidly admit the ox in question to have been, in my judgment, at the time I saw him, the most complete I ever put my hand on.

The dairy of Devon cows appears to be, and I am assured is, highly productive, each cow, no matter what her other excellences, being rejected which proves a bad milker. They present great uniformity of character, with all the genuine distinctions of the pure North Devon cattle, and, with great aptitude to fatten, possess precisely the compact bodies and short legs, which constitute the *multum in parvo* I have so often advocated. Much as I admire the Norfolk husbandry—much as I have seen to admire in the zeal of Mr. Coke's tenantry to evince their gratitude and respect, there are two things which I must censure and deplore. While the judicious and spirited improvements in tillage of this great landed proprietor have been forcing conviction, and obtaining adoption, his efforts as to the stock of the country have been comparatively vain, and he stands alone, a solitary instance of a man who for forty-two years has produced proof, and invited investigation into the merits of his Devons—has offered and committed costly sacrifices to carry his useful object, without, except in few instances, being able to induce his tenantry to adopt a profitable breed of cattle, for an unprofitable one—a system of economy devoted to the most useful end, in lieu of a system of extravagance, purchasing its advantages at a rate beyond all chance of remuneration. With, as I said before, few exceptions, the miserable and unthrifty homebreds are the cattle kept; generally speaking, little or no regular stock of cattle is maintained, and during the present year, in the month of September, short-horns, (so called,) and every wretched specimen conceivable of all that is bad, were consuming oil-ake in the yards, for the purpose of converting the straw to manure. On this subject Mr. Coke feels, and well he may, much disappointment, but it is not confined—this blindness to their true interests—to the article of cattle alone. In sheep it is the same; and prepared as I am to show, hereafter, that no breed in the island now equals, in profit, that of Holkham, I shall only here observe, that so far behind the rest of the world are the majority of Norfolk men on the subject of stock, that they appear to select with a view to obtaining those qualities which well-informed men would pronounce bad, and invariably reject.

WEeping TREES.—Mr. William Anderson, Curator of the Botanic Garden at Chelsea, writes as follows to the Prussian Gardening Society. Fascicles or bundles of shoots are often observed on trees, which resemble birds' nests at a distance; but, when examined, they prove to be a cluster of small twigs. Such bundles are observed on different trees, but more frequently on the white or common birch tree. In the year 1808, I observed such a bundle on a *Cratægus* (*Mespilus*) *Oxyacantha*, (hawthorn,) and grafted young thorns with them, which, in two or three years, produced beautiful weeping branches. About the same time I observed such a bundle on *Ulmus campestris* (common elm,) eyes of which were budded on healthy young trees, and every one produced a long hanging shoot. According to this observation, it would be very easy to produce a large collection of drooping or weeping trees. Our gardeners, however, multiply no species so numerous as the *Fraxinus excelsior* var. *pendula* (weeping ash); which variety often retains its hanging character when raised from seeds. We possess several such trees, of about ten feet in height, which were raised from seed of the original tree, obtained in 1790 from a nurseryman, who found it a few years previous to that in the neighborhood of Newmarket, in Cambridgeshire.—[Hort. Reg.]

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LITERARY NOTICES.

No. XX.

Boyd's Grove, Illinois, Jan. 25th. 1834.

It was so long since I had seen a stone at all deserving the name of a rock, that I took a good deal of satisfaction in scaling the bluffs of the Illinois, and traversing the adjacent ravines, before getting out on the prairie the morning that I left Ottawa.—In one of these rocky gullies—which run generally at right angles to the river, and with their precipitous walls in one place, and cavernous passages beneath the jutting limestone in another, often form some picturesque dell, or afford a romantic glimpse of the open country beyond—I saw the first cascade I have met with since leaving Pennsylvania. The fall was not more than ten feet, but the column of water being frozen in a solid sheet as white as the purest porcelain, presented a very singular appearance as it raised its pale glistening front beneath a canopy of stunted cedars, whose green branches impended from the rocks above. Our sleigh after winding for sometime among this broken ground, and passing over one or two small but beautiful pieces of bottom land lying among the ravines, reached at last the top of the bluff, where, instead of descending on the other side, the level prairie extended as far as the eye could reach beyond. A few hours drive brought us to a log cabin, which was our place for dining and changing horses, and here we found that owing to the newness of the route, arrangements were not yet completed for the stage going farther. Hearing a stranger speaking in terms of enthusiasm of the fine view from "Starved Rock"—a detached crag some 200 feet high, on the banks of the Illinois, where one band of Indians were surrounded and starved to death by another (I refer you to "Flint's Valley of the Mississippi," for the legend)—I made arrangements to visit the spot in the morning. A chill north-easter swept over the bleak prairie as my travelling companion and myself, mounted upon two miserable nags, neither of which were shod, struck on an Indian trail, that brought us in an hours ride to the craggy and precipitous banks of the Vermillion river, which it was necessary to cross. A sickly looking, but rather interesting woman came out of a poor looking log hut, beside which, housed under a few boards, stood a handsome barouche—to direct us where to descend the bank; and my friend on foot leading his horse, mine followed, trembling, after him, and notwithstanding the steep path was glazed with ice, we descended the first pitch in safety. Pausing here for a moment, the confused masses of rock with trees and shrubs of all kinds growing in their crevices, reminded me as I looked around, of more than one scene of the kind in the river counties of my native State. It was now my turn to lead down the next pitch, which led to the frozen bed of the river. Upon gaining the edge I perceived that the descent was a perfect glare of ice, and pausing a moment to hand a loaded gun, which I carried, to my companion, lest it might be discharged in the accident which I anticipated: my horse lost his footing even as I turned in the saddle, and falling flat over upon me, down we slid together. I had not gone two yards, however, before a small jutting rock brought me, but little bruised, to an anchorage, while my unfortunate consort, after sliding over a part of my person, went, though struggling fearfully to regain his feet, slipping to the bottom.—He landed at last erect, with his face up the ascent, and though now on the level ice of the river, the poor brute seemed to think he was still midway on the declivity he had been hurried over so roughly—for without looking at all behind him, he stood trembling for an instant, and then in spite of all the outcry we could raise to keep him back, commenced ascending to where we stood, and actually persevered till he had gained the place from whence he had started.—The only way now to effect our purpose, was for one to go below and the other to drive the horses down to him. This we indeed did, and I do not know when I have been more amused, than upon seeing my worthy Bucephalus, as if taught by past experience, quietly—when he found he must go—placing himself upon his haunches, and sliding down the little hill with a degree of coolness and skill, that would have been envied by the boldest schoolboy on *Flattenbar-reck*. Crossing the Vermilion we were compelled to drive our horses in the same way up the bank on the opposite side, and by catching hold of the branches of trees, drag ourselves after them as we best could. Once on the height nothing but a level plain of rich prairie land lay between us

and the bluffs of the Illinois. It was crossed here and there at intervals of a few miles, with Indian trails, about a foot in width, and worn as deep as if they had been trod for centuries. They ran in various directions, and were generally as straight as the flight of an arrow. A heavy rain throughout the previous night had swept all the snow from the prairie, and these black lines drawn over its brown surface, were now perceptible at a great distance. A long reach of woodland immediately before us, indicated our approach to the Illinois bottoms, but on entering the timbered ground, where the snow still lingered in considerable quantities, we found ourselves on the slippery bluffs, a hundred feet above the level of the river opposite, without the possibility of descending to its bed. These bluffs were divided about every half mile by the romantic ravines, already described; and having now discovered that we had entirely missed the road to "The Starved Rock," it only remained for us to attempt descending through these passages, and find the place by a route of our own. We led the way by turns, and urging our unwilling horses down the frozen beds of the little streams, which impart their coolness in autumn to these sequestered dells, we tried three ravines in succession, without attaining our object. One would bring us up against a dead wall of limestone, in the crevices of whose base the rill we had been following suddenly disappeared, a second carried us to the abrupt edge of a precipice, about fifty feet above the river, whose rich bottoms, extending far away below, reminded me, with the occasional copses and detached clumps of trees which studded them, of points of views in the valley of the Mohawk. Nothing, on so small a scale, could be more picturesque, than the nook to which the third ravine led us. It was to the upper edge of a double cascade, over the second fall of which an arch of rock projected, so as to shut out from view the basin into which the water finally fell below. The passage through which we reached the spot, was a mere fissure in the side-hill; and when, not wishing to get my feet wet, I urged my horse to the brink of the little cascade, the long icicles pendant from the hanging rock above were almost within reach of my riding-whip. A number of gnarled and stunted cedars, "moist trees, that have outlived the eagle," fling their dusky branches over the chasm, and when summer foliage glitters on the tall stems, whose naked boughs project above them, the sun must be wholly excluded from this cool retreat.

Our horses were so fagged out when we extricated ourselves from this ravine, that we did not think it well to try another; and my companion being afraid of freezing his feet, which were wet from his having dismounted at the most difficult parts of the descent, I was sorry to be compelled to give up the search and return to our lodgings, after an eight hours' ride, without having seen the interesting point we had taken so much trouble to attain.

The stage proprietor resident at Chicago had arrived at the farm house during our absence; and hearing that two gentlemen were detained upon the road, had, with great politeness, at once taken measures to send us on the next morning. The room, too, in which we had slept before—four in two beds, and three on the floor—had now been vacated by five of its occupants, and my companion and I each appropriated a couch to himself. We were hardly warm under the cover, however, before the tramping of horses, with the sound of travellers' voices, was heard without; and the good dame thrust her head into the room in the vain expectation of showing them an unoccupied bed. My companion pretended to be in a sound sleep; and I intimated that I should betake myself to my buffalo robe and the floor, in case a bed-fellow were thrust in upon me: whereat, the kind lady was exceedingly misfitted; and we could hear her through the board partition a moment afterwards, expressing herself after this amiable fashion; "Ugh! great people, truly!—a bed to themselves—the hogs!—They travel together—and they eat together—and they eat enough, too—and yet they can't sleep together!" Here the husband, an intelligent middle-aged man, who did everything to make our situation comfortable during the thirty-six hours we spent at his cabin, interposed, and silenced his better half; and the new comers, wrapping themselves in their cloaks before the fire, in a few minutes all became still about the establishment.

The good dame, who must have been a fine looking woman in her day, and was, I believe, in spite of her scolding ways, really well disposed towards us at heart, gave us a capital cup of coffee, and a kind farewell in the morning. A four-horse wagon,

with an active driver, quickly accomplished a mile of rough road through the grove, and brought us once more to the edge of the smooth prairie. I can conceive nothing more desolate than the appearance of that boundless plain. The fires had traversed it in the autumn as far as the eye could reach, and the snow having now disappeared entirely from the upland, the black and charred surface was all that met our vision wherever it wandered. A dark sullen sky which lowered over head added not a little to the gloominess of the prospect; and the day being excessively cold, our ride for the next fifteen miles over this dreary plain was anything but agreeable. At last we came to some broken ground, dotted here and there with a handful of shrubbery, from which every moment a pack of grouse, and occasionally a bevy of quails would rise. The little village of Hennepin—called after father Hennepin—next hove in sight; though it lay so sheltered along the banks of the Illinois, that we were nearly upon the hamlet before its vicinity was discoverable.

After stopping an hour or two to dine and feed our horses, we left the driver to get down the steep bank, which, though not rocky, is about 50 feet high, and very precipitous on that side of the river, while my friend and I descended to the ice, and walked over the river, which was here a broad and noble stream, with some beautiful alluvial islands on its bosom. The difference of temperature here and on the bleak prairie above, was astonishing; and when I sat down upon a fallen tree among the tangled vines of the rich bottom opposite to Hennepin, and watched a flock of green paroquets fluttering among the witch-elms, which here and there skirted the shore, while the sun for a moment piercing his murky veil touched with gold the icicles that glazed their drooping branches, I could fancy myself transported to a different climate. The driver overtook us at last, and then we commenced making our way through a timbered bottom, which, for appearance of rank fertility, excelled any spot I have ever beheld. The trees, which were of enormous size, seemed chained together at every point, by the huge vines which clambered to their very summits, locking the stately stems in their ponderous embrace, and clasping each outer bough with some twining tendril, which, having thus secured its prey on one tree, seemed like a living animal to have bounded to another, and fastened its eager grasp upon some limb as yet untouched. Beneath the whole an interminable growth of under-wood, protected by the woven canopy above, and flourishing rankly in its living fetters,

"Like prisoners wildly overgrown with hair,
Put forth disordered twigs."

A half hour's ride carried us through this teeming region to the foot of a steep and open-wooded hill, which, ascending with some difficulty, we came out once more upon the prairie, and found the change of temperature instantaneous. The road over the dry, grassy plain was very good, however, for the first six or eight miles, and as the evening began to close in intensely cold, we rattled them off in a very short time. At last, we came to a deep frozen gully, in crossing which our leaders bruised themselves so badly by breaking through the ice, that when we reached a spot of the same kind, but rather worse, a mile or two in advance, the frightened animals recoiled from the place, and refused to cross it. Our driver, a doughty little chap about five feet eleven, who rejoiced in the name of Sampson, and was a capital whip, by the bye, after using every exertion to get his whole team over, was at last compelled to give up the point, and proceed to detach the leaders from the wheel horses. This, with our aid, was soon done; and my companion remaining with the leaders on one side, Sampson and I made a dash at the frozen brook, and, breaking through in the midst, the horses gave such a spring to free themselves from the wagon, that the swingletree bolt snapped, and had not the heroic little champion held on to the reins as tenaciously as a certain criminal judge in your city to his office, we might have been left a prey to the next drove of Philistinean wolves that should rove the prairie in quest of a supper. Sampson, however, was true to his name; and with a mighty arm bringing up his foaming steeds all standing, we crawled over the head of the rampant wagon (the hind wheels only had gone through the ice) and sprang to the firm ground. The swingletree was soon tinkered fast again; but now came the difficulty of getting the unwilling leaders over, who, it is presumed, had been no uninterested spectators of what had just been going forward; coaxing and whipping availed nothing; and we at last succeeded only by buckling two pair of reins together and passing them over the brook, two of us pulling on the horses mouths, while the third applied a smart castigation

behind. One of the poor animals again broke in, and floundered dreadfully before he reached a firm footing on the other side. But this was not the worst; our poor little Sampson in attempting to jump, plunged in himself to his knees, and suffered much inconvenience from it afterwards. The evening was indeed so cold that our wheel horses, who were coated with ice, their long tails being actually frozen solid, were in danger of freezing to death, had we been compelled to delay much longer. But, placing now the leaders on the firm ground beyond them, one smart pull served to extricate the wagon from the hole, and deliver us finally from our quandary. We had five or six miles still to go before reaching a house, and feeling some anxiety about Sampson's wet feet, we urged him to put the horses—nothing loath when once started—to the top of their speed. He did indeed drive furiously; but when we arrived at the house whence I write, the poor fellow's feet were frozen. Rushing at once to the fire, he would doubtless have lost them, had there not chanced to be a physician present, who directed us what to do. The good humored little patient was removed without delay to the back part of the room, and we commenced pouring water into his boots until they melted from his feet, the temperature of the water being gradually heightened till it became blood-warm, while a bucket of ice-water stood by for the sufferer to thrust his feet in whenever the returning circulation became too violent for him to endure. In the morning, though his feet were dreadfully swollen, he was enabled, by tying them up in thick horse blankets, to move about, and even return with his team. To the simple and judicious suggestions of the travelling physician present, our little hero was in all probability indebted for escaping a most awful calamity: a settler in this neighborhood having lost both legs a few days since by an exposure similar to Sampson's.

I am now staying at the house of a flourishing farmer, whose sturdy frame, bold features, and thick long black hair, would, with his frank address, afford as fine a specimen of the western borderer as one could meet with, and never allow you to suspect that ten or fifteen years ago he was a New York tradesman. He lives, like all other people of this country, in a log cabin, which has many comforts about it however, not usually found in these primitive dwellings. Having a large family, with no neighbors nearer than ten miles on one side and twenty on the other, he maintains a schoolmaster to instruct his children: the room I occupy at night being fitted up with desks and benches as a school room. His farm, which lies along the edge of a beautiful and well watered grove, supplies him with almost everything that he wants; and having once pursued a different mode of life, he seems now to realize the full independence of his situation, &c. more even than those who have always been brought up as farmers. I told him this morning, as he sallied out to chop, with his two sons axe in hand, all clad in their belted capotes and white woollen hoods, that I should like to meet his sun-burnt features and independent step in Broadway, to see how many of his old acquaintance would recognize the pale mechanic in the brown backwoodsman. He promised me, if he came in winter, to appear with the guise in which I then beheld him, adding in western phraseology, "The way in which I'll do that, Squire, will be a caution."

After being detained here some days, waiting for the St. Louis stage, and losing my travelling companion, who, having bought a horse, has gone on by himself, I have concluded that it would never do to go out of this country without visiting Galena and the mining country: and as there is now a stage running thither, I shall take the first opportunity to go with it. I have amused myself for the last three nights in watching for wolves by moonlight, at the edge of the wood, a few hundred yards from the house. They came howling round the house after nightfall, and if one is 'in luck' at all, are easily shot. But last night, after leaving my position but for five minutes, I heard the report of a rifle, and hastening to the spot, where a lad staid to fill my place for a moment, I found that a gray and a black wolf of the largest kind had approached suddenly within two or three yards of the muzzle of his gun, and startled him so, that he missed them both. In the confident hope of their return—for the bait that we had thrown about the place was still there—I took the little fellow's place, and wrapping myself in my buffalo skin, lay watching on the ground till nearly daybreak; and the enemy then not making his appearance, I was glad to creep shivering to bed.

Upon entering my room, which contained three

beds, I observed, after striking a light, that the one opposite to mine was occupied by a new-comer, while a sheet suspended from the ceiling near the head of the other, and concealing the phrenology of its occupants from view, was evidently meant as a caveat against reconnoitering that part of the apartment.

Two gentlemen and a pretty young woman, who I was told was a bride on her way to St. Louis, breakfasted with us the next morning. And how was I shocked and horrified to see Madam, after wrapping herself in a handsome cashmere shawl, while their sleigh was getting ready, raise her white lace veil and place the stump of a pipe between her rosy lips! Can you conceive a more legitimate cause for divorce? Whose love would not end in smoke at witnessing such an awful phenomenon? 'An American bride smoking a pipe!' What a subject for Cruickshank to illustrate, by way of frontispiece to the next edition of Captain Hamilton's 'Men and Manners'! Genius of Trollopism, shield and shelter us! If a woman must smoke anything less ethereal than a jest, let not the accursed vapor steal their dew from lips so fresh. Let not her 'piping time' arrive so soon. Let not—I can no more.

You shall hear from me next at Galena. Till then, farewell. H.

WRITINGS OF WASHINGTON.—In noticing some weeks ago these admirable volumes, published by Mr. Sparks, we referred to some of the early papers of Washington. Among these, written in his own hand, is a series of maxims under the head of "Rules of civility and decent behavior in company and conversation." Of these there are 110. The only specimens published we extract, and agree with Mr. Sparks in the opinion, that "whoever has studied the character of Washington, will be persuaded that some of its most prominent features took their shape from the rules thus early selected and adopted as his guide."

1. Every action in company ought to be with some sign of respect to those present.
2. In the presence of others, sing not to yourself with a humming noise, nor drum with your fingers or feet.
3. Sleep not when others speak, sit not when others stand, speak not when you should hold your peace, and walk not when others stop.
4. Turn not your back to others, especially in speaking; jog not the table or desk on which another reads or writes, lean not on any one.
5. Be no flatterer, neither play with any one that delights not to be played with.
6. Read no letters, books or papers in company, but when there is a necessity for doing it you must ask leave. Come not near the books or writings of any one so as to read them, unasked. Also, look not nigh, when another is writing a letter.
7. Let your countenance be pleasant, but in serious matters somewhat grave.
8. Show not yourself glad at the misfortune of another, though he were your enemy.
9. When you meet with one of greater quality than yourself, stop and retire, especially if it be at a door, or any strait place, to give way for him to pass.
10. They that are in dignity or office have in all places precedence; but whilst they are young, they ought to respect those that are their equals in birth or other qualities, though they have no public charge.
11. It is good manners to prefer them to whom we speak before ourselves, especially if they be above us, with whom, in no sort, we ought to begin.
12. Let your discourse with men of business be short and comprehensive.
13. In visiting the sick, do not presently play the physician, if you be not knowing therein.
14. In writing or speaking, give to every person his due title, according to his degree and the custom of the place.
15. Strive not with your superiors in argument, but always submit your judgment to others with modesty.
16. Undertake not to teach your equal in the art himself professes: it savors of arrogance.
17. When a man does all he can, though it succeeds not well, blame not him that did it.
18. Being to advise, or reprehend any one, consider whether it ought to be in public or in private, presently or at some other time, also in what terms to do it; and in replying, show no signs of choler, but do it with sweetness and mildness.
19. Take all admonitions thankfully, in what place ever given; but afterwards not being culpable take a time or place convenient to let him know it that gave them.

20. Mock not, nor jest at any thing of importance; break no jests that are sharp biting, and if you deliver any thing witty and pleasant, abstain from laughing thereat yourself.

21. Wherein you reprove another be unblameable yourself, for example is more prevalent than precept.

22. Use no reproachful language against any one, neither curses nor revilings.

23. Be not hasty to believe flying reports, to the disparagement of any one.

24. In your apparel be modest, and endeavor to accommodate nature rather than procure admiration. Keep to the fashion of your equals, such as are civil and orderly with respect to time and place.

25. Play not the peacock, looking every where about you to see if you be well decked, if your shoes fit well, if your stockings sit neatly, and clothes handsomely.

26. Associate yourself with men of good quality if you esteem your own reputation, for it is better to be alone than in bad company.

27. Let your conversation be without malice or envy, for it is a sign of a tractable and commendable nature, and in all causes of passion admit reason to govern.

28. Be not immodest in urging your friend to discover a secret.

29. Utter not base and frivolous things amongst grown and learned men; nor very difficult questions or subjects among the ignorant, nor things hard to be believed.

30. Speak not of doleful things in time of mirth, nor at the table; speak not of melancholy things, as death and wounds, and if others mention them, change, if you can, the discourse. Tell not your dreams but to your intimate friends.

31. Break not a jest where none take pleasure in mirth. Laugh not aloud nor at all without occasion. Deride no man's misfortune, though there seem to be some cause.

32. Speak not injurious words, neither in jest or earnest. Scoff at none, although they give occasion.

33. Be not forward, but friendly and courteous; the first to salute, hear and answer, and be not pensive when it is a time to converse.

34. Detract not from others, but neither be excessive in commending.

35. Go not thither, where you know not whether you shall be welcome or not. Give not advice without being asked, and when desired, do it briefly.

36. If two contend together, take not the part of either unconstrained, and be not obstinate in your opinion; in things indifferent be of the major side.

37. Reprehend not the imperfections of others, for that belongs to parents, masters and superiors.

38. Gaze not on the marks or blemishes of others, and ask not how they came. What you may speak in secret to your friend, deliver not before others.

39. Speak not in an unknown tongue in company, but in your own language; and that as those of quality do, and not as the vulgar. Sublime matters treat seriously.

40. Think before you speak; pronounce not imperfectly, nor bring out your words too hastily, but orderly and distinctly.

41. When another speaks, be attentive yourself, and disturb not the audience. If any hesitate in his words, help him not, nor prompt him without being desired; interrupt him not nor answer him till his speech be ended.

42. Treat with men at fit times about business, and whisper not in the company of others.

43. Make no comparisons; and if any of the company be commended for any brave act of virtue, commend not another for the same.

44. Be not apt to relate news, if you know not the truth thereof. In discoursing of things you have heard, name not your author always. A secret discover not.

45. Be not curious to know the affairs of others, neither approach to those that speak in private.

46. Undertake not what you cannot perform; but be careful to keep your promise.

47. When you deliver a matter, do it without passion and discretion, however mean the person may be you do it to.

48. When your superiors talk to any body, hear them, nor neither speak nor laugh.

49. In disputes be not so desirous to overcome as not to give liberty to each one to deliver his opinion, and submit to the judgment of the major part, especially if they are judges of the dispute.

50. Be not tedious in discourse, make not many digressions nor repeat often the same matter of discourse.

51. Speak no evil of the absent for it is unjust.

52. Make no show of taking great delight in your victuals, feed not with greediness, cut your bread with a knife, lean not on the table, neither find fault with what you eat.

53. Be not angry at table whatever happens, and if you have reason to be so show it not, put on a cheerful countenance, especially if there be strangers for good humor makes one dish a feast.

54. Set not yourself at the upper end of the table, but if it be your due, or the master of the house will have it so, contend not lest you should trouble the company.

55. When you speak of God to his attributes, let it be seriously in reverence and honor, and obey your natural parents although they be poor.

56. Let your recreations be manful not sinful.

57. Labor to keep alive in your breast that little spark of celestial fire called conscience.

FOREIGN INTELLIGENCE.

THREE DAYS LATER.—By the packet ship Europe, Capt. Maxwell, we have received London papers to March 16th, and Liverpool to the 15th (Saturday,) inclusive.

There have been fresh disturbances at Madrid.—The dates from that capital are to March 7th.

LONDON, SATURDAY, MARCH 15.—Consols, which left off at 81 5.8 3.4 this day sen'night, opened on Monday at 91 1.2, since which time they have not been higher than 91 1.2 5.8, nor lower than 91, closing last night at 91 3.8 1.2.

Money has not been near so plentiful; and the Bank of England has been making the Westminster Bank feel its power and influence, in making large offers of money on loan, in sums of not less than £2,000 on India Stock, and Exchequer Bills, at 3 per cent. 5 per cent. interest is now required for money in the city; and very lately it might have been obtained at 3 per cent. with ease.

LIVERPOOL, MARCH 15.—The splendid new American ship Kensington, which was stranded on the Welch coast, during the late gales, while on her first voyage from New York to Liverpool, has been raised by Messrs. Seddon and Leadley, and towed into Carnarvon Bay. She will shortly be brought round to Liverpool.

LONDON, MARCH 14.—Last night Mr. Ripton moved for leave to bring in a bill "for relieving the Archbishops and Bishops of the Established Church from their legislative and judicial duties in the House of Peers." After a discussion, attended by rather remarkable circumstances, to which we have elsewhere alluded, the motion was negatived by a majority of 67—the numbers being 125 and 58.

LONDON, MARCH 15.—Last night the North American Postage Bill went through Committee, was reported, and ordered to be read a third time on Monday.

Mr. Buckingham gave notice, that on the 26th of May he would move for leave to bring in a bill for the prevention of duelling; and also for the appointment of a select Committee to inquire respecting the vice of drunkenness.

Lord Althorp stated that he intended to propose that the House should adjourn for the recess from Wednesday, the 26th instant, to Monday, the 14th of April.

AMSTERDAM, MARCH 10.—The Handelsbald says:—"Constant Polari, alias Carrara, was to day found guilty by the Court of Assize of a forcible entry at night, and robbing in an uninhabited house, and condemned to stand on a scaffold at the Hague for half an hour, to be confined in a house of correction, and to the payment of costs, with orders for an extract of the sentence to be posted up at the Hague and at Brussels, and that the articles, as many of them as are in the hands of justice, shall be restored to the owner."

"In the course of yesterday Polari narrated all the circumstances that preceded, accompanied, and followed the robbery of the diamonds; he repeated his previous declaration, that he was the sole person in the robbery, and that it was suggested to him by the gold ornaments, which he thought he could distinguish from the street in the palace of the Prince; that he never had any communication with any person in the Palace."

[From Galiznani's Messenger.]

"DISTURBANCES AT MADRID.—We have received from Madrid by express the Gazette, the Age, and the Bulletin of Commerce, of the 4th inst. The Gazette has the following:—"In the night of Sunday last, symptoms of disorder were observed in a house named El Paradiso, in the street called Toledo, and at length it arose to a great height, the peo-

ple within uttering seditious cries. But before the magistrates and troops could arrive, many of the respectable inhabitants of the neighborhood, of their own accord, assembled to suppress the disturbance, giving evident proofs of their zeal and resolution to maintain the laws and legitimate cause of the Queen Isabella II. Two of the disorderly persons were killed on the spot, and all who offered any resistance to the troops or attempted to make their escape were wounded and immediately conducted to the royal prison, with all who appeared to be their accomplices, the neighbors continuing to lend their assistance to the authorities. However scandalous and criminal this conduct was, it did not extend sufficiently wide to interrupt the public tranquillity, nor was it even known at any distance from the place where it took place.

The Age gives a much more serious character to these events, and represents Madrid to be in a state resembling anarchy, stating that several inhabitants, whose names it gives, have been attacked in the streets by the Carlists, and compelled to take up arms in their own defence. Many arrests have taken place, it says, and most of those who have been taken to prison are friends to the Queen. Groups of Carlists pretend to be the night patrol, and go their rounds accordingly. Under the date of 7 in the evening, it adds—"The danger is imminent; the insurgents are firing in the quarter Arapias." This journal concludes by urging the Government to use the utmost severity.

The Bulletin of Commerce accuses the Royalist Volunteers of being the authors of what has taken place. It states that the disorder has existed for several nights, and that at last a party of the perturbators had come to the point of firing upon the partisans of the Queen, in the quarter of the Cabada, shouting "Charles V. for ever!" They afterwards retired to a house in the street called Toledo, which they invested with the name of the Castle of Charles V., and where they made a desperate resistance, till 5 or 6 of them were killed, and about 30 wounded and taken to prison. Some of the troops were also wounded, missiles of all kinds having been hurled at them by the rioters. The Bulletin also concludes by recommending that no mercy should be shown to the rebels.

The following is an extract of a letter of the 4th instant, from Madrid:—"Several members of the Royal Court of Madrid have been dismissed as Carlists. On account of the dissatisfaction occasioned by the decree relative to suburban militia, it has been repealed. A royal order of Charles V., countersigned by the Bishop of Leon, his Minister of Justice, orders the Carlist troops who support his cause to shoot all that may be found fighting for Isabella II. However, adds the decree, the august persons of the Queen and the two Princesses her daughters shall be respected."

The Indicateur of Bordeaux of the 8th inst. gives the following from St. Sebastian of the 5th—"On the day before yesterday the rebels of Biscay were surprised at Omate by Brigadier Espartero, at the moment they had piled their arms, and were sitting down to their meal. They were completely routed, 900 of them having left their muskets behind them, and their loss in killed, wounded, and prisoners, amounting to 200. The commander of the Chincha Queen's volunteers having arrived opportunely at Elosno, fell upon the fugitives, and killed a great many more of them. A few days ago the whole of the insurgents of Biscay, forming a force of 7,000 men, with a few bands from Guisasaosa and Alva, besieged Guernica, and the Queen's garrison, notwithstanding it had been reinforced by 1,300 men, was obliged to give up the position for want of ammunition and provisions. In retiring, however, they made about 30 prisoners, amongst whom is the commandant Barron. After their defeat at Omate, the rebels, it is to be presumed, cannot for a long time assemble in any great numbers.

A letter of the 7th inst. from Bayonne announces that the Spanish ex-Minister, M. Zea, has taken his departure for Rome, but it is not believed that he is charged with any mission.

There had been a disturbance in Saragossa on the 27th ult. and some fighting in the streets, by which several lives were lost; but it is not very distinctly stated whether it originated in a Carlist insurrectionary movement.

The Memorial Bordelais of the 8th inst. has the following—"We learn from St. Sebastian that the decree for organizing the Urban Militia has been publicly burnt in that town, without the authorities being able to prevent it. An express was immediately sent off to convey this news to Madrid. According to the last accounts from the Capitol, extreme effervescence

prevails there. The people loudly call for the dismissal of Ministers, particularly of Burgos and Zarco del Valle. The discontent has become general, and if the Queen's government does not pursue a different course, a revolution will break out at all points, and blood will be shed in abundance."

LIVERPOOL COTTON MARKET, March 11.

Since our report last week the cotton market has continued depressed, and the prices we then quoted are no longer obtainable: we reduce them 1d per lb on Bowed, Alabama, and Orleans: about 1d on Brazil, and 1d on Sea Island. Speculators have taken 300 American and 300 Surat, and Exporters 700 Surat. The import this week is 23,413 bags, 110 Sea Island and 141d to 20d—20 stained to 11d—3,610 Bowed 8d to 9d—3,400 N Orleans 8 1/2 to 9 1/2.

SUMMARY.

LIBERAL COURTESY.—By the annexed correspondence, it will be seen, that the British Government, propose to present to each of the Institutions in the United States, enumerated below, a copy of a very valuable publication now in progress in England. This country is indebted much to Mr. O. Rich, an agent for the purchase of books in London, for his participation in this matter—and in the act of the British Government, we see with satisfaction a liberal and enlightened feeling of comity towards the United States.

London, Feb. 21st, 1834.

SIR—In consequence of your suggestion, that the Record Commission were desirous of presenting copies of their valuable publications to some of the Literary Institutions of the United States, I have the honor of enclosing herewith, a list of the principal Libraries where they would be most acceptable, and to which I shall have great pleasure in forwarding copies. I have numbered them according to their relative importance, in order that the Commissioners may be the better enabled to judge which to send to. Some of the latter numbers are inserted more on account of their locality, there being other Libraries of more importance, but situated in the immediate neighborhood of the Institutions mentioned in the first part of the list. It will be a great gratification to me to be the medium of transmitting to the United States, this noble mark of the liberality and good feeling of the British Government towards my Country, and I feel confident that it will be productive of the happiest effects in drawing together the bonds of union between two nations more closely allied by natural ties than any other two on the face of the Globe.

With sentiments of respect and esteem, I have the honor to be, very sincerely, your humble servant,

O. RICH.

C. P. COOPER, Esq.

Secretary to the Record Commission, &c. &c. &c.

PUBLIC LIBRARIES.

1. The Philadelphia Library, Philadelphia, Pennsylvania.
2. The Boston Athenæum, Boston, Massachusetts.
3. The New York Society Library, New York.
4. The Charleston Society Library, Charleston, South Carolina.
5. The Baltimore City Library, Baltimore, Maryland.
6. The New York State Library, Albany, New York.

UNIVERSITY LIBRARIES.

14. The Library of Bowdoin College, Brunswick, Maine.
11. The Library of Dartmouth College, Hanover, New Hampshire.
7. The Library of Harvard University, Cambridge, Massachusetts.
12. The Library of Amherst College, Amherst, Massachusetts.
15. The Library of Brown University, Providence, Rhode Island.
8. The Library of Yale College, New Haven, Connecticut.
16. The Library of the College of New Jersey, Princeton, New Jersey.
- The Library of the University of Virginia, Charlottesville, Virginia.
17. The Library of the University of North Carolina, Chapel Hill, North Carolina.
10. The Library of the College of South Carolina, Columbia, South Carolina.
18. The Library of the University of Georgia, Athens, Georgia.
19. The Library of the University of the State of Alabama, Tuscaloosa, Alabama.
13. The Library of Transylvania University, Lexington, Kentucky.
21. The Library of St. Louis University, St. Louis, Missouri.

20. The Library of the University of Ohio, Athens, Ohio.

NEW BOSWELL'S COURT, LINCOLN'S INN,
February 22d, 1834.

SIR—Being assured that his Majesty's Government and the Record Commissioners entertain sentiments in all respects corresponding to those which you recently stated to me were entertained by the United States towards the British Isles, I have had no hesitation in instructing his Majesty's Printers to prepare sets of the Record Publications for the *whole* of the American Libraries, mentioned in the list accompanying your letter of yesterday.

I am, Sir, your obedient humble servant,
C. P. COOPER.

O. RICH, Esq.

These Public Records, of which the cost for each set is about *Two hundred pounds sterling*, consist of "the Statutes of the Realm," "Domesday Book," "Rymer's Collection," and other rare and ancient public documents, which, considering our descent, cannot but be of great value here, as consulting books.

APPOINTMENTS BY THE PRESIDENT,

By and with the advice and consent of the Senate.

WILLIAM M. PRICE to be Attorney for the Southern District of New York, in the place of James A. Hamilton, whose commission has expired.

JOHN P. HALE to be Attorney for the District of New Hampshire, in the place of Daniel M. Durell, whose commission has expired.

JAMES W. EXUM to be Marshal for the District of West Florida, reappointed.

GEORGE K. WALKER to be Secretary for the Territory of Florida, in the place of James D. Westcott, whose commission has expired.

DESTRUCTION OF THE PACKET SHIP NEWARK.

This vessel, lying out in the North river, waiting a wind to proceed to *New Orleans*, and having on board a very valuable cargo, took fire last night at half past 11 o'clock, and burnt to the water's edge.—Boats from the shore and from the Austrian frigates put off to her as soon as the flames were discovered.

THE MEAT OF DISEASED CATTLE.—An investigation of an interesting character has recently engaged the attention of the faculty in Paris. In consequence of the supposed custom among the butchers, of exposing for sale the flesh of animals that had died of various diseases, it was determined by the government to ascertain, if possible, what diseases, in animals intended for the butcher, are capable of communicating to their meat deleterious qualities. The result of the inquiry, which was pursued with great diligence, was, that only one of the diseases of cattle possesses a contagion for the human subject, that is not destroyed by the process of cookery: this disease is *malignant pustule*. Vast numbers of cattle, it appeared, were constantly sold for slaughter while laboring under other complaints, but no authenticated case could be discovered in which harm had resulted from the use of their meat. Thousands even of the cattle slaughtered while laboring under the contagious typhus that prevailed among them so extensively in 1814, 1815, and 1816, were used as food without any discoverable injury. Singular as this fact may seem, it appears to be well established by this investigation.

On the whole, the conclusion drawn in the report is, that butcher's meat is deleterious to man in two conditions—1st, When spoiled by too long keeping; and 2d, When the animals slaughtered were affected with malignant pustule.

Although the process of cooking may prevent any injurious consequences from the eating of a diseased animal, yet it is very unpleasant to know the fact that the beef on our table is from cattle sick with typhus, with liver complaint, with inflammation of the lungs, and many of the disorders incidental to such animals, and the only dependence is on the integrity of the butchers, who will not give such meat to their customers, knowing it to be diseased. One great advantage which the Mosaic law and Rabbinical institutions have over

all modern customs, is blending religious, with political regulations, purifying both soul and body at the same time. The beef exposed in our markets with leaden seals must necessarily be free from all or nearly all the impurities in cattle complained of above. An experienced person, who has studied the anatomy of the beast, is commissioned and paid by the congregation to kill all kinds of butcher's meat. The animal is not stunned with blows, producing stagnation and congestion of the blood; the throat is cut with a remarkably sharp knife, and all the veins and arteries are emptied; the lungs are searched with the hand; if the liver is attached to the ribs, or there are impurities, malformation, or any apparent disease, it is condemned, and the leaden seals are not attached to the meat. It is thus that the observance of ancient laws by this ancient people give them great protection against feeding on diseased animals, and our old New-Yorkers, of all religious denominations, who understand the object, generally give a preference to the meat with leaden seals.

FANNING MILL.—An ingenious wight, named William Gall, has constructed a pair of self-acting fanners, which, without the aid of man, sift wheat, corn, &c. The simplicity of the invention is astonishing. By a funnel of sheet-iron, the wheat descends upon an iron wheel full of brackets; the wheel is so nicely balanced, that the moment the wheat falls the wheel revolves, and throws the wheat into a pair of fanners on the flat below. On the outside of the iron wheel is a wooden one, and over it is a belt attached to the fly wheel of the fanners, which impels them, and so long as a particle of wheat is left, the machine moves and throws it out.—[Sat. Eve. Post.]

Lines occasioned by the following notice taken from the Baltimore Gazette, and reprinted in the American during the prevalence of the Cholera. Died on Thursday last, at Hospital No. 3, Sister Mary Frances, one of those Angels in human form, who are found, not in the shade of luxury, but in all our hospitals, supplying the wants, and ministering comfort and consolation to the sick and the dying, regardless of personal danger, and rejecting all temporal compensation. "The deceased was found in the morning attending as usual to the patients in the hospital, with the smile of peace and serenity on her countenance; she sickened about 8 o'clock, and by 7 in the evening was a corpse."

TO THE SISTERS OF CHARITY.

For you, ye heaven-sent Sisters, pure and meek,
No idle, flattering accents I intend—
I know, full well, no earthly need you seek;
Above all mortal praise your thoughts ascend.
Undaunted intimates of death and pain!
You heed no minstrelsy of earth—strung lyre:
The softest siren notes would sound in vain
To ears impatient for the heavenly choir.
But who that treads life's rough and weary way,
If some fair prospect open on his sight,
Seeks not his fellow wanderers' step to stay,
And make them partners in his new delight?
Turn then, all ye who, with indignant mind,
Behold the villainess of this mortal state;
Where craft and guile on ev'ry hand you find,
With all the forms of selfishness and hate—
Here let your misanthropic brow unbend,
And warmest feelings of the heart expand;
For, if to earth some gleams of Heaven descend,
They were must light upon this sacred band.
And ye who sport beneath the golden beams
That o'er youth's jocund morning shed their light,
To whom the downward path of life still seems
Immeasurably distant from the sight;
Oh! think me not a censor cold and stern,
A frowning foe to all that's bright and gay,
If, for a moment, I would have you turn
And see these Sisters tread their holy way.

I would not have fierce superstition's power
Bear down your minds, in sullen gloom to grope;
I would not overcloud one radiant hour,
Nor crush one rising bud of youthful hope:
Yet, stay awhile, nor all your moments waste
For joys inconstant as the vernal sky:
You here may deep, though silent, pleasure taste,
Whose impress on the soul shall never die.
For how can earth present a goodlier scene,
Or what can waken rapture more refin'd,
Than dauntless courage, silent and serene,
With maiden gentleness and love combin'd?
Behold in yon receptacle of woe,
Where victims of disease assembled lie,
That gliding form, with noiseless footstep go,
From couch to couch, her angel task to ply:
She dwells mid sounds and sights of pain and death;
The feeble plaint, the involuntary cry,
The fierce convulsive throw, the insect-like breath,
The heaving groan, the deep-drawn burning sigh.
Oh! child of frolic, in whose giddy brain
Delusive fancy's ever on the wing,
Think you this grimé maid feels nought but pain?
That in her path no lovely flowers spring?

Gay visions round your pillow nightly throng—
The morning ramble, and the evening dance,
The rout, the feast, the soul entrancing song,
The dattler's whisper, and the lover's glance.

Around her couch no brilliant phantasms play:
No airy spectre of past pleasure flies;
Burdens of mercy which have mark'd the day
Give tranquil slumber to her tear-stain'd eyes.
They're precious gems, those tears that wet her cheek
Worth more than all that earth or ocean know:
The noblest language of the heart they speak;
From high and holy ecstasy they flow.
Her feelings ye alone can understand
Whose deeds have wak'd the sufferer's grateful prayer;
Who've felt the pressure of the dying hand,
The rich reward of all your pious care.

No sad or strange reverse her pleasures dread;
Of time and chance, they mock the strong control.
Her heaven-aspiring virtues ever shed
A cloudless light upon her peaceful soul.

The folios that command this world's esteem,
Within her spirit find no resting place;
Like idle motes that cross the solar beam,
They serve its bright and changeless way to trace.
Yes! such this sacred band, such peace in their
Unchang'd when days shine bright, or tempests lower
Through life they pass, unstained by its cares;
When death draws near, they gladly hail his power.
And then, like birds that seek a better clime,
On swift untiring wing their spirits rise,
And gladly leave this turbid stream of Time,
To take their homeward progress thro' the skies.

SILVIO.

[From the Calcutta Quarterly Magazine and Review.]

THE SONG OF THE FORGE.

Clang, clang,
The massive anvils ring
Clang, clang,
A hundred hammers swing,
Like the thunder rattle of a tropic sky
The mighty blows still multiply,
Clang, clang,
May brothers of the dusky brow,
What are your strong arms forging now?

Clang, clang—we forge the coulter now,
The coulter of the kindly plough;
Sweet Mary mother, bless our toil;
May its broad furrow still unbind
To genial rains, to sun and wind,
The most benignant soil.

Clang, clang—our coulter's course shall be
On many a sweet and sheltered lea,
By many a streamlet's silver tide,
Amidst the song of morning birds,
Amidst the low of sauntering herds,
Amidst soft breezes which do stray
Through woodbine hedges and sweet May,
Along the green hill's side.

When regal autumn's bounteous hand,
With widespread glory clothes the land,
When to the valleys from the brow
Of each resplendent slope, is roll'd
A ruddy sea of living gold.

We bless, we bless THE PLOUGH.
Clang, clang,—again, my mates what glows
Beneath the hammers' potent blows?
Clank, clank,—we forge the giant chain,
Which bears the gallant vessel's strain
Midst stormy winds and adverse tides;
Secured by this, the good ship braves
The rocky roadstead, and the waves
Which thunder on her sides.

Anxious no more, the merchant sees
The mist drive dark before the breeze,
The storm cloud on the hill;
Calmly he rests, though far away,
In boisterous climes, his vessels lay,
Reliant on our skill.

Say, on what sands these links shall sleep,
Fathoms beneath the solemn deep:
By Africa's pestilential shore,
By many an ice berg, loan and hear,
By many a palmy western isle,
Basking in Spring's perpetual smile;
By sterny Labrador.

Say, shall they feel the vessel reel
When to the battery's deadly peal
The crashing broadside makes reply;
Or else, as at the glorious Nile,
Held grappling ships, that strive the while,
For death or victory?

Hurrah—clang, clang—once more, what glows,
Hark brothers of the forge, beneath
The iron tempest of your blows
The furnace's red breath?

Clang, clang—a burning shower clear
And brilliant, of bright sparks, is poured
Around and up in the dusky air,
As our hammers forge the sword.

The sword!—extreme of dread; yet when
Upon the freeman's thigh 'tis bound
While for his altar and his hearth,
While for his land that gave him birth,
The war drums roll, the trumpets sound,
How sacred is it then!

Whenever for the truth and right
It flashes in the van of fight,
Whether in some wild mountain pass,
As that where fell Leonidas;
Or on some sterile plain and stern,
A Marathon, or a Bannockburn;
Or amidst crags and burning rills,
The Switzer's Alps, grey Tyrol's hills;
Or, as when sunk the Armada's pride,
It gleams above the stormy tide;
Still, still, where'er the battle word
Is Liberty, when men do stand
For justice and their native land,
Then Heaven bless the sword!

THE PILGRIMS OF THE RHINE.—We have seen in the hands of Wm. A. Colman, a copy of this new work of Bulwer. It is eminently beautiful in its typography and plates—of which latter there are twenty-seven.

The **SENTRY BOX**, engraved by Danforth, from *Leslie's* picture, is also to be seen at the same place, and is well worth looking at.

[From the *St. Louis Republican*, March 10.]

THE MORMON DIFFICULTIES.—A late number of the *Enquirer*—a paper just started at Liberty, Mo.—contains a military order from Governor Dunklin to the captain of the "Liberty Blues," commanding him to hold himself and his men in "readiness to assist the civil authorities in apprehending and bringing to trial the persons offending against the laws, in November last, in Jackson county, in conflicts between the Mormons and a portion of the other citizens of that county." He is commanded to attend the court in that county, during the trial of the cases, and execute such orders as may be given him by the Judge or Circuit Attorney. Under these orders, and at the request of Judge Ryland, who stated that a number of Mormons wished to testify before the Grand Jury, Captain Atchison marched his company into Independence, on the day appointed for holding court, having a number of Mormons under his protection. After a stay of about three hours it was concluded by Judge Ryland, the Circuit Attorney, and Attorney General Wells, that "it was entirely unnecessary to investigate the subject on the part of the State, as the jury were equally concerned in the outrages committed, and it was therefore not likely that any bills would be found." The Captain was therefore directed to return to Liberty and to discharge his men. "To see a civil court (the Governor says) surrounded by a military force, is well calculated to awaken the sensibilities of any community," and the Governor charges his subordinate officer to perform his duties in the mildest manner possible. It is certainly a new thing in this country, to see the military called in to protect the civil authorities in the exercise of their just powers; and goes far to prove how far we have relaxed in virtue and a regard for the laws which ought to govern us. Every patriot must hope, that the occasion may seldom arise when it shall be necessary to surround a judicial tribunal with such guards. It is a pernicious example, but rendered, perhaps, necessary in the present case by the extraordinary circumstances attending the conflict.

FOREIGN INTELLIGENCE.

APRIL 5TH.—At a late hour we received by the Liverpool packet, *Pacific*, our London files to the 5th ult.; and we are indebted to the kind consideration of the *Matte of the Pacific*, for the London Times of the 10th March, and the Liverpool Standard of the 11th for which he will accept our thanks. These are also due to Mr. Hope, the Pilot, who finding our boat unable to pull up against a strong head wind, made a signal for his pilot boat, the William Bayard, to take her in tow, and bring her up to the Narrows.

In the House of Commons Mr. Hume's motion for a repeal of the corn laws, by substituting a fixed duty, was defeated on Friday 7th, after two nights' debate, by a majority of 312 to 155.

On the same day Lord Althorp introduced a bill to repeal the House tax.

Paris dates are to the 8th of March; Madrid and Lisbon to the 1st. Disturbances of a serious nature, but without loss of life, occurred in Paris on Sunday, the 23d of Feb. They were undergoing judicial inquiry. In the Chamber of Deputies they had also been discussed. Gen. Jacqueminot, the Commander of the National Guards, said

The National Guard, I do not hesitate to say it, is tired, fatigued, and discontented (murmure), and in fact, gentlemen, the position of the citizens composing it is become intolerable, for they are continually under the necessity of taking up arms to defend their shops and warehouses. The citizen, instead of taking his wife out to walk of a Sunday, is obliged to shoulder his musket. As for myself, I am thirsting after that repose of which I have been deprived for the last three years. As for the bludgeon men, I abhor them as much as M. Barrot himself can abhor them.

Of general news there is nothing important.

Burgos had not resigned his seat in the Spanish Cabinet.

The *Foreign Intelligence* by the Pacific—of which we gave an outline on Saturday—though much later than before received, is in truth of very little interest; and our columns are at this moment too much crowded with matter of near and pressing importance to leave us room for miscellaneous extracts.

In England, affairs look well enough. The rejection of Mr. Hume's proposition for a repeal of the corn laws, and for allowing the importation of foreign corn at a fixed rate of duty, together with the failure of a previous motion by Sir I. Ingoldsby to abolish the excise on malt, (which amounts to near £5,000,000 sterling per annum), encouraged Ministers to repeal the house and window taxes—two vexatious and not very productive sources of revenue.

A petition had been presented to Parliament from the shipping interests, praying that the practice of *impressment* for the Navy might be abolished. It had not been discussed, but Lord Grey had intimated incidentally his doubts of the expediency of complying with it.

The Reverend Mr. Gleig, author of the *Subaltern*, and the deer-up of Lord Londonderry's military campaigns, and who, though a clergyman, had distinguished himself by his zeal, in opposition to the Reform Bill—had received from Lord John Russell the appointment of chaplain to the Chelsea Hospital. The appointment is badly viewed by the whole Ministerial press.

A plethora of money, or superabundance of capital seems to be complained of generally in England. Mr. Alexander Baring, said in his place in the House of Commons—that if the twenty millions which are to be paid to the slave owners in the colonies, instead of being funded, were issued in the shape of floating debt—that is, if, instead of stock redeemable at a distant period, (in which, according to Mr. B., there is now less confidence than there used to be) Exchange bills were issued—they could be negotiated at an interest not exceeding two per cent. per annum—that is, about the rate of our monthly interest in these times.

In France, Louis Philippe goes the whole against the liberty, or possibly the license of the press. The law for the suppression of publications sold by criers in the streets, was followed by the condemnation of M. Cabet, a member of the Chamber of Deputies, for a publication tending to bring the King's government into contempt. We annex a brief notice of the trial.

COURT OF ASSIZES.—SITTING OF FEB. 28.

Trial of M. Cabet.—A strong military force was stationed in the Palais de Justice and the environs; troops of the line were bivouacked in the area opposite the Court of Accounts, and the whole companies occupied the Salle des Pas Perdus and the galleries of the Court of Cassation. Military patrols and a multitude of police agents circulated in all the passages and avenues.

The court was crowded, principally by persons of note, including many deputies, among whom we observed Messrs. Dupont de l'Eure, Berard, Arago, Lafitte, Garnier Pagès, Georges Lafayette, Legendre, d'Argenson, de Ludre, Cormenin, Odillon Barrot, Laboussiere, Maille, Corcelles, Puyraveau, Mauguin, Comte, General Bertrand, &c.

The Registrar read the authorization to prosecute, granted by the Chamber of Deputies, and other papers of mere form, and then proceeded to read the two articles inserted in the *Populaire* of January 12 and 19, upon which the prosecution was grounded. The first was entitled *La République dans la Chambre*. The other article was entitled *Crimes des Rois contre l'Humanité*, after censuring Louis Philippe for repelling the Poles, in obedience to Nicholas, represents his system as counter-revolutionary, anti-national, and anti-popular, and himself as the enemy of the patriots of all countries. Both these articles were signed "Cabet." The Registrar then called Messrs. Lafayette, Arago, Dupont de l'Eure, Lafitte, Odillon Barrot, and Bernard, the witnesses summoned on the part M. Cabet.

The Procureur General, however, objected to their being examined, as the prosecution was for offences against the laws of the press.

M. Cabet maintained his right to have them heard, on the ground that one of the passages complained of was, "the evil is in Louis Philippe," and he

wished to prove that it was he alone who governed, and who in particular had chosen Prince Talleyrand and other personages of the same description, but he concluded by renouncing his claim to interrogate witnesses.

M. Persil then addressed the jury, at considerable length.

M. Marie, counsel for M. Cabet, addressed the Court and jury on behalf of his client.

M. Garnier Pagès having obtained leave of the Court, delivered an energetic speech in defence of M. Cabet.

M. Persil, in reply expressed his regret that the law against the associations had not been presented 18 months ago. Either the associations must be dissolved, or the monarchy of Louis Philippe must fall. "We (added he) fought against Charles X., and we will fight against the republic, if it must be so."

M. Marie spoke briefly in reply, after which,

Mr. Cabet addressed the Court and the jury. He made a profession of his political faith, declaring that he wished not for a revolution, but for the people to obtain their rights by the force of public opinion. The year 1793 was a tempest that might have arisen under a monarchy. The best Republicans were those who wished for blood the least.

The President then summed up, and the Jury retired, and after three quarters of an hour's deliberation, returned and delivered a verdict of guilty upon the second count.

The Court in consequence condemned M. Cabet to two years imprisonment, interdiction of civil rights for two years more, and a fine of 4,000f.

LAFAYETTE is spoken of in a late letter from Paris, in the Times, as about soon to resume his seat in the Chamber.

We do not see in the disturbances at Paris or Lyons, any indications to justify the alarm expressed by some of the London papers, respecting the duration of Louis Philippe's government.

In Spain all goes on slowly and doubtfully. Difficulties occur about convoking the Cortes, and the delay tends to alienate the liberals from the Queen's government. The Queen Regent is spoken of slightly as to her private deportment, as though another Godoy were to be raised up in an obscure favorite she has found.

In Portugal the quarrel endures, and will endure, apparently, for notwithstanding the decisive advantage gained by Saldanha over the Miguelites on the 18th February, Miguel still at the latest dates from Lisbon, (1st March,) held *Santarem*—while misunderstandings prevailed among Pedro and his generals.

Of the Northern powers little is said, and of their movements and plottings less appears to be known.

THREE DAYS LATER FROM ENGLAND.—The ship *Lotus* arrived last evening, sailed from Liverpool on the 16th ult., and we are indebted to Captain Watts for the Liverpool Mercury of the 14th, the only paper he brought.

LIVERPOOL, March 13.—The sales of Cotton for the week ending this evening, amounted to only 9000 bales, and prices declined 1.4d. per pound. The arrivals were only two from the U. States, and one from Brazil. Our corn market was dull, and prices rather declined.

LONDON, March 13th, (correspondent of the Liverpool Mercury.) Public matters to day have not been mixed with any intelligence, or domestic occurrence. Proceedings in Parliament do not appear to excite any interest whatever, and the prevailing impression appears to be that this Parliament will separate without doing any thing whatever. The Bank of England has now offered to lend money in sums not less than 2000l. on India Bonds and Exchequer Bills, at three per cent. Money is again very plentiful, and of easy discount. The issue of the debate on the corn trade continues to be the subject of conversation and disappointment amongst all classes of the citizens, and next to the budget nothing has excited them so much.

The money market has been heavy today; Consols have declined to 91 1/4 from 91 1/2, the price at which they opened. Spanish and Portuguese are much at the price of yesterday, but very little has been done, and the tendency of the money market is drooping.

The Colonial Market is without interest; the demand continues limited, and the market is but scanty.

ly supplied; the imports are very fair, but we think that as the season advances prices will decline; most of the quotations are merely nominal, and the principle article, Sugar, is selling about 300 hhds. daily at 50s. for brown, 52s. to 54s. 6d. yellow, and fine 68s. to 68s. 6d.; Mauritius, 4707 bags went by public sale this day, at 44s. to 56s. 6d. for low brown to fine yellow, being former prices. Oils—There is still a very good demand for all sorts of seal and fish at higher prices.

FALMOUTH, Sunday morning, 11 o'clock.—The Pike has this morning come in, having left Lisbon on the afternoon of Tuesday last. The account she brings is of a much more cheering character to the Constitutional cause than what has lately been received. An engagement took place on Sunday morning with the outposts of the two armies, which brought on a general engagement, the report of which was a complete defeat of the Miguelite force that lay outside of Santarem. The few that remained from the effects of the dreadful slaughter retreated within the walls of the city, upon which it was expected an immediate attack would be made, as Don Pedro left here yesterday, accompanied by the Duke of Terceira, for the army. I have no time to say more, as other expressions are about leaving.—[Courier, March 10.]

NOW READY,

AN INTERESTING AND USEFUL MAP.

Upon which is delineated nearly all the Railroads now chartered in the U. States. It is designed to show the present contemplated connexion of the different lines, as well as where others may hereafter be constructed to connect with them. It may be had either in sheets, price \$1 25, or put up in Morocco for pocket maps, price \$1 50, or on rollers at \$2 25, in any quantity, by applying to the subscriber.

D. K. MINOR, 35 Wall street.

New-York, April 2, 1835.

LOCOMOTIVE ENGINES.

THE AMERICAN STEAM CARRIAGE COMPANY, OF PHILADELPHIA, respectfully inform the public, and especially Railroad and Transportation Companies, that they have become sole proprietors of certain improvements in the construction of Locomotive Engines, and other railway carriages, secured to Col. Stephen H. Long, of the United States Engineers, by letters patent from the United States, and that they are prepared to execute any orders for the construction of Locomotive Engines, Tenders, &c. with which they may be favored, and pledge themselves to a punctual compliance with any engagements they may make in reference to this line of business.

They have already in their possession the requisite apparatus for the construction of three classes of engines, viz. engines weighing four, five, and six tons.

The engines made by them will be warranted to travel at the following rates of speed, viz. a six ton engine at a speed of 15 miles per hour; a five ton engine at a speed of 18 miles per hour; a four ton engine at a speed of 22 1/2 miles per hour. Their performance in other respects will be warranted to equal that of the best English engines of the same class, with respect not only to their efficiency in the conveyance of burdens, but to their durability, and the cheapness and facility of their repairs.

The engines will be adapted to the use of anthracite coal, pine wood, coke, or any other fuel hitherto used in locomotive engines.

The terms shall be quite as favorable, and even more moderate, than those on which engines of the same class can be procured from abroad.

All orders for engines, &c. and other communications in reference to the subject, will be addressed to the subscriber, in the city of Philadelphia, and shall receive prompt attention.

By order of the Company,

WILLIAM NORRIS, Secretary.

December 24, 1833.
For further information on this subject see No. 49, page 778 of this Journal.

ALBANY SEED-STORE AND HORTICULTURAL REPOSITORY.

The subscriber having resumed the charge of the above establishment, is now enabled to furnish traders and others with FRESH GARDEN SEEDS, upon very favorable terms, and of the growth of 1833, warranted of the best quality.

The greatest care and attention has been bestowed upon the growing and saving of Seeds, and none will be sold at this establishment excepting those raised expressly for it, and by experienced seedsmen; and those kinds imported which cannot be raised to perfection in this country; these are from the best houses in Europe, and may be relied upon as genuine.

It is earnestly requested whenever there are any failures hereafter, they should be represented to the subscriber; not that it is possible to obviate unfavorable seasons and circumstances, but that satisfaction may be rendered and perfection approximated.

Also—French Lucern, White Dutch Clover, White Mulberry Seed, genuine Mangel Wurzel, Yellow Locust, Ruta Baga, and Field Turnip Seeds, well worth the attention of Farmers.

W. THORBURN,

347 N. Market st. (opposite Post Office.)

Catalogues may be had at the Store; if sent for by mail, will be forwarded gratis. Orders solicited early, as the better justice can be done in the execution.

Mr. Thorburn is also Agent for the following publications, to wit:—

NEW YORK FARMER and American Gardener's Magazine. MECHANICS' MAGAZINE and Register of Inventions & Improvements.

AMERICAN RAILROAD JOURNAL and Advocate of Internal Improvements; and the

NEW-YORK AMERICAN, Daily, Tri-Weekly, and Semi-Weekly, either or all of which may be seen and obtained by those who wish them, by calling at 347 North Market street, Albany.

TOWNSEND & DUFFEE, of Palmyra, Manufacturers of Railroad Rope, having removed their establishment to Hudson, under the name of Duffee, May & Co. offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J. B. Jervis, Eng. M. & H. R. Co., Albany; or James Archibald, Engineer, Hudson and Delaware Canal and Railroad Company, Carbondale, Luzerne county, Pennsylvania. Hudson, Columbia county, New-York, January 29, 1835.

NOTICE TO MANUFACTURERS.

SIMON FAIRMAN, of the village of Lansingburgh, in the county of Rensselaer, and state of New-York, has invented and put in operation a Machine for making Wrought Nails with square points. This machine will make about sixty 6d nails, and about forty 10d nails in a minute, and in the same proportion larger sizes, even to spikes for shive. The nail is hammered and comes from the machine completely heated to redness, that its capacity for being clenched is good and sure. One horse power is sufficient to drive one machine, and may easily be applied where such power for driving machinery is in operation. Said Fairman will make, vend and warrant machines as above, to any persons who may apply for them as soon as they may be made, and on the most reasonable terms. He also desires to sell one half of his patent right for the use of said machines throughout the United States. Any person desiring further information, or to purchase, will please to call at the machine shop of Mr. John Humphrey, in the village of Lansingburgh.—August 15, 1833. A29t RM&F

RAILWAY IRON.

Ninety-five tons of 1 inch by 1/2 inch,	Flat Bars in lengths of 14 to 16 feet counter sunk holes, ends cut at an angle of 45 degrees with splitting plates, nails to suit.
300 do. 1 1/2 do. do.	
40 do. 1 3/4 do. do.	
800 do. 2 do. do.	
soon expected.	

250 do. of Edge Rails of 36 lbs. per yard, with the requisite chairs, keys and pins.

Wrought Iron Rails of 30, 33, and 36 inches diameter for Wheels of Railway Cars, and of 60 inches diameter for Locomotive wheels.

Axles of 24, 28, 30, 32, 34, 36, and 38 inches diameter for Railway Cars and Locomotives of patent iron.

The above will be sold free of duty, to State Governments and Incorporated Governments, and the Drawback taken in part payment.

A. & G. BALSTON,

9 South Front street, Philadelphia.

Models and samples of all the different kinds of Rails, Chairs, Pins, Wedges, Spikes, and Splicing Plates, in use, both in this country and Great Britain, will be exhibited to those disposed to examine them.

SURVEYORS' INSTRUMENTS.

Compasses of various sizes and of superior quality warranted.

Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by E. & G. W. BLUNT, 124 Water street, corner of Maidenlane.

ENGINEERING AND SURVEYING INSTRUMENTS.

The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely new: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy; also, a Railroad Goniometer, with two Telescopes—and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.

WM. J. YOUNG,

Mathematical Instrument Maker, No. 9 Dock street, Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.

Baltimore, 1832.

In reply to thy inquiries respecting the instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad. I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable.

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sights, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to later angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,

JAMES F. STABLER, Superintendent of Construction of Baltimore and Ohio Railroad.

Philadelphia, February, 1833.
Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind now in use, and as such most cheerfully recommend it to Engineers and Surveyors.

E. H. GILL, Civil Engineer.

Germantown, February, 1833.
For a year past I have used instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY R. CAMPBELL, Eng. Philad.,

Germant. and Norrist. Railroad

STEPHENSON,

Builder of a superior style of Passenger Cars for Railroads No. 264 Elizabeth street, near Blacker street, New-York.

RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part of the New-York and Harlem Railroad, now in operation. J33 tf

RAILROAD CAR WHEELS, BOXES AND

AND OTHER RAILROAD CASTINGS.

Also, AXLES furnished and fitted to wheels complete at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to. Also, CAR SPRINGS.

Also, Flange Tires turned complete.

J8 ROGERS, KETCHUM & GROSVENOR.

NOVELTY WORKS,

Near Dry Dock, New-York.

THOMAS B. STILLMAN, Manufacturer of Steam Engines, Boilers, Railroad and Mill Work, Lathes, Presses, and other Machinery. Also, Dr. No. 1 Patent Tubular Boilers, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited. m18



INSTRUMENTS.

SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

EWING & HEARTTE, at the sign of the Quadrant, No. 53 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude.

For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewing & Heartte.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable. They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES F. STABLER,

Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' Instruments of your Manufacture, particularly Spirit Levels, and Surveyors' Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These Instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

WILLIAM HOWARD, U. S. Civil Engineer.

Baltimore, May 1st, 1833

To Messrs Ewing and Heartte.—As you have asked me to give my opinion of the merits of those instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming acquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark; by my self, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprise so well merits, I remain, yours, &c.

B. H. LATROBE,

Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them upon application, to any person desirous of perusing the same.

Dip, Declination and Variation of the Needle in the United States. By A. CITIZEN OF NEW-YORK. [For the Railroad Journal.]

If the manufacturer of compasses in Birmingham, England, will be so polite as to send to Doct. Smith, 28 Water st., New-York, two of his needles, that stand alike in their directive course for three days successively, he will then answer the question put by him in the Railroad Journal, of March 22d, 1834; for he never has seen two needles, which were imported from England, that stand alike for that length of time.

THE BRAZILIAN BAMBOO.—"Among the trees which attracted our attention," says Dr. Walsh in his travels in Brazil, "were the different species of bamboo, some of which were of enormous size, and some of singular beauty. Of the first kind were many that measured two feet in circumference, sending out large lateral branches, and so tall as to resemble forest trees. Others, of equal magnitude, without any branches, shot out in a single stem divided into regular joints, smooth and tapering to a point, till they attained an immense height. Some were not so thick, but ran up till they became so slender that they bent down, gradually tapering to a very fine point, as thin as a horse hair, and waving across the road like long fishing rods. I cut one of them, which had shot up from the valley below, about the middle, where it was not quite so thick as my wrist. After carrying it some time in my hand, where it felt lighter than a cart whip, I laid it along the road and measured its length, and found it fifteen yards long, so that the entire plant must have been ninety feet, tapering, and polished the whole way with the most exquisite finish." Another kind was so prolific that it covered the whole surface of the forest, climbing to the tops of the highest trees, and clothing them with the most exquisite verdure. Sometimes it ran from tree to tree, covering the whole sloping surface of a glen with a level uniform curtain of the richest drapery. This vegetable surface is called "grass of the thicket." It yields the cattle a supply of green and wholesome fodder at all seasons.

✧ The following Gentlemen have consented to act as Agents for the NEW-YORK FARMER AND AMERICAN GARDENER'S MAGAZINE; also, for the MECHANICS' MAGAZINE—the AMERICAN RAILROAD JOURNAL—and for the AMERICAN PLOUGH-BOY:

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" J. R. Pollock, 100 Spruce st.

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Baltimore—Britain Chase, at the Railroad Company's Office.)
" W. & J. Neal, Booksellers.
" E. J. Corle & Co.

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Everettsville—James Fitz.
Fredericksburg—W. Battail.
New-Baltimore—T. H. Hampton.
Richmond—R. J. Smith.

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Rocky Spring—A. L. Robinson.
Vicksburg—Miles C. Folkes.

LOUISIANA.

Avoylle Ferry, Red River—P. G. Voorhies.
New-Orleans—W. McKean.

UPPER CANADA.

Montreal—Editor of the Herald.
York—J. W. Brent.

LOWER CANADA.

Quebec—W. Brent, Librarian.

VOL. III. OF THE RAILROAD JOURNAL AND ADVOCATE OF INTERNAL IMPROVEMENTS is published once a week in quarto form, with 16 pages to each number, at \$3; or in semi-monthly form, of 32 pages, stitched in a cover of colored paper, at \$4 per annum, in advance. The first and second volumes of the Journal may be had in two parts to the year, either stitched in covers or bound in boards, at the subscription price, with price of binding, in one part, 50 cents, in two parts \$1 per volume. Those in covers may be sent by mail to any part of the country, the same as a magazine. Published at No. 35 Wall st., New-York, by D. K. MINOR, Editor and Proprietor.

THE MECHANICS' MAGAZINE AND REGISTER OF INVENTIONS AND IMPROVEMENTS is now just commencing its second year. It will be continued in a manner altogether superior to that of the first year. It has drawn forth many valuable correspondents, in different parts of the country, with the assistance of whom, and those who may hereafter contribute to its columns, together with the ability of Mr. JOHN KNIGHT, formerly, and for several years, proprietor and publisher of the LONDON MECHANICS' MAGAZINE, who is engaged as Editor, the proprietor has no hesitation in saying that it will be found worthy of an extended circulation and a liberal support. The first year, or two first volumes, having been stereotyped, may now be had either in numbers, or bound in boards—either at wholesale or retail. Price \$1 50 per vol. in numbers, or \$1 75 in boards, or \$3 per annum. A liberal discount made to the trade. Published by the proprietor, D. K. MINOR, at No. 35 Wall st. N. Y.

THE NEW-YORK FARMER AND AMERICAN GARDENER'S MAGAZINE, has commenced the second volume of a new series. It is published once a month, in quarto form of 32 pages to each monthly number, at \$3 per annum in advance. The last volume may be had either stitched in a cover, so as to be sent by mail, or in boards. Price, stitched, \$3 25; in boards, \$3 50. Each subscriber who pays in advance, or previous to the first of April, free of postage or commission, will be entitled to eight additional pages to each monthly number, or 96 extra pages to the volume. Published at No. 35 Wall street, N. Y. D. K. MINOR, Proprietor. Jan. 22, 1834.

A QUARTERLY JOURNAL OF AGRICULTURE AND MECHANICS will hereafter be published at the same office. Each quarterly number will contain about 300 large octavo pages, embracing the most choice articles from the best agricultural and mechanical publications both in America and Europe. It will form 2 volumes to the year, of about 640 pages each, and will be put up like other quarterly publications, so as to be sent by mail. Price, \$5 per annum, in advance.

N. B. A small edition only will be published.

Also, the NEW-YORK AMERICAN, daily, tri-weekly, and semi-weekly.

Also, the PLOUGH-BOY, a cheap agricultural publication, of eight quarto pages, is issued once a week, at \$1 50 per annum, in advance. It contains much interesting reading upon agriculture, &c.

✧ All Letters and Communications for the above publications, may be addressed, free of postage, to D. K. MINOR.

PATENT RAILROAD, SHIP AND BOAT SPIKES.

✧ The Troy Iron and Nail Factory keep constantly for sale a very extensive assortment of Wrought Spikes and Nails, from 3 to 10 inches, manufactured by the subscriber's Patent Machinery, which after five years successful operation and now almost universal use in the United States (as well as England, where the subscriber obtained a Patent,) are found superior to any ever offered in market.

Railroad Companies may be supplied with Spikes having countersink heads suitable to the holes in iron rails, to any amount and on short notice. Almost all the Railroads now in progress in the United States are fastened with Spikes made at the above named factory—for which purpose they are found invaluable, as their adhesion is more than double any common spikes made by the hammer.

✧ All orders directed to the Agent, Troy, N. Y., will be punctually attended to.

HENRY BURDEN, Agent.

Troy, N. Y. July, 1831.

✧ Spikes are kept for sale, at factory prices, by I. & J. Townsend, Albany, and the principal Iron Merchants in Albany and Troy: J. I. Brower, 223 Water street, New-York; A. V. Jones, Philadelphia; T. Janviers, Baltimore; Degrand & Smith, Boston.

P. S.—Railroad Companies would do well to forward their orders as early as practical, as the subscriber is desirous of extending the manufacturing so as to keep pace with the daily increasing demand for his Spikes.

J23 1am

H. BURDEN.

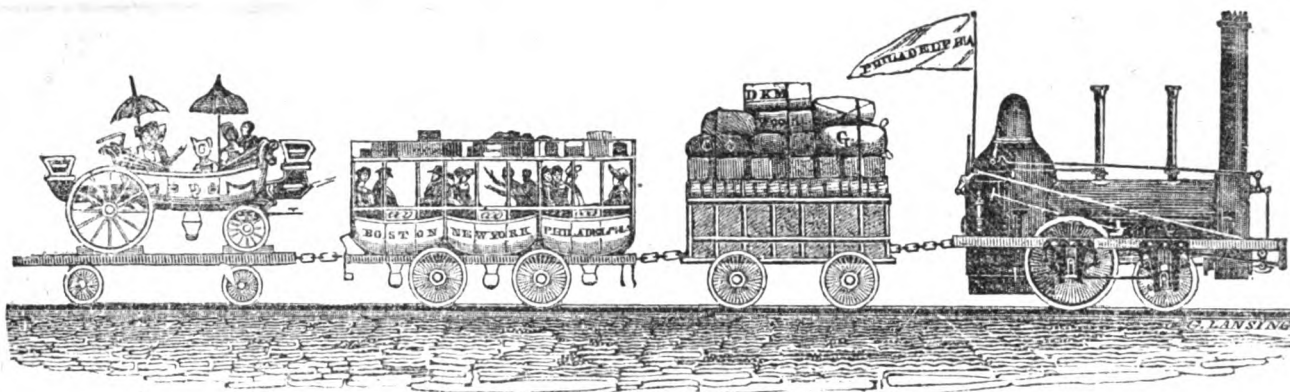
TO CIVIL ENGINEERS.

The Western Railroad Company, incorporated by an act of the General Assembly of the State of Tennessee, for the purpose of constructing a Railroad from the town of Jackson, in the county of Madison, by the most practicable route to the Mississippi river, wish to employ one or more persons as engineers to survey the route and superintend the location and construction of said road. Gentlemen who wish employment in the above capacity, will forward to the undersigned on or before the 3d day of June next, the terms upon which they are willing to engage, also the most unquestionable testimonials of good character and scientific and practical skill in works of the above description. An election of an engineer will not take place before the 3d of June.

By order of the Free't & Directors.

JOS. E. TALBOT, Cash'r & Sec.

Jackson, March 18, 1834.



AMERICAN RAILROAD JOURNAL, AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT No. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, EDITOR.]

SATURDAY, APRIL 19, 1834.

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, APRIL 19, 1834.

It is much to be desired that the bill mentioned in the following notice may become a law :

SURVEY OF THE NEW-YORK AND ERIE RAILROAD ROUTE.—A bill providing for this survey through the southern tier of counties, at the expense of the State, under a principal engineer to be appointed by the Governor, is now before the Legislature.

INTERNAL IMPROVEMENT.—A project for connecting, by a sloop and steamboat canal, the great western lakes and the Hudson river is on foot, and seems to command great attention from the inhabitants of the interior of our State as well as those of Michigan and Ohio. The plan is to render navigable the Oswego, Cayuga, Oneida, Seneca, and Mohawk rivers, the Oneida lake and Wood Creek. We give the following proceedings of the Executive Council of the Territory of Michigan. The project is one of great importance, and we trust will be found practicable.—[Standard.]

EXECUTIVE DEPARTMENT, }
March 7th, 1834. }

RUDOLPH BUNNER, Esq.,

President of the Convention at Oswego, N. Y.

SIR,—In accordance with the resolution of the Legislative Council of the Territory of Michigan, I have the honor to transmit herewith their resolutions, concurring "in the views adopted at a meeting of the citizens of the county of Oswego, New-York, on the 12th Dec. 1833, relative to the formation of a navigable communication on the American side between Lakes Erie and Ontario."

I have the honor to be, very respectfully, your obedient servant,
G. B. PORTER.

COUNCIL CHAMBER, }

Detroit, March 1st, 1834. }

Resolved, by the Legislative Council of the Territory of Michigan, That the efforts made in the western part of the State of New-York and elsewhere, to effect a navigable communication, on the American side, between Lakes Erie and Ontario, are highly laudable, and meet with the entire concurrence in this House.

Resolved, That this enlightened enterprise, if successful,

will be of vast usefulness to this Territory, and the whole country bordering upon the great lakes.

Resolved, That such improvement is the more imperiously required, in consequence of the rapid advance of our neighbors in Upper Canada, and, in the event of future wars, would be of the utmost importance to the security and defence of this frontier.

Resolved, That we concur in the views contained in the memorial and resolutions on this subject, adopted at a meeting of the citizens of the county of Oswego, New-York, on the 12th of December, 1833, which have been communicated to this House.

Resolved, That the Governor of this Territory be requested to transmit a copy of the foregoing resolutions to Hon. Lucius Lyon, Delegate in Congress from this Territory, and to Rudolph Bunner, Esq., President of the Convention at Oswego, referred to in the previous resolution.

JOHN McDOWELL,

President of the Legislative Council.

(Attest,) John Norvall, Secretary.

TRENTON, April 12.—*Delaware and Raritan Canal.*—The water, let into the feeder week before last, continues to flow and gradually increase in the main Canal; there will soon be sufficient, if no breach occurs, for boating hence to Princeton. The main Canal is of sufficient capacity to contain 8 feet in depth and 60 feet wide at the surface.—[State Gazette.]

The following Report, relative to the use of Railroads in Pennsylvania, will be found interesting to many of our readers :

Report relative to the Use of the Pennsylvania Railroads—MR. KEATING, Chairman—Read in the House of Representatives, March 4, 1834.

The Committee to whom was referred, on the 9th December last, so much of the Governor's message as relates to the transportation on and use of the railroads of this Commonwealth, report—

That they have investigated the subject committed to them, with all the deliberation which it required, and that they herewith submit a bill embracing the result of their inquiries.

The novelty of the subject, and the difficulties which surround it, will at once appear from the fact, that, in the course of their investigations, the committee have met with no parallel case to which they could look for conclusive information. All the railroads in this country, and all those in Great Britain, (so far as your committee know,) are owned by private companies; and no information was within their reach, in relation to the railroads on the continent of Europe, which could be availed in this case.

Having, therefore, no precedent to guide them, in relation to railroads made by a state

or government, the committee were obliged to confine themselves to the investigation of the general principles applicable to the case, to the analogies to be derived from the experience of private companies, and to the opinions of enlightened and experienced men.

The first general principle they considered, was, what was the object of these works? Whether intended to benefit a large trade, carried on a long line of public work; or to facilitate the intercourse between points not far distant from each other? Thus, the first inquiry is, undoubtedly, was the Philadelphia and Columbia railroad made to benefit the great trade between the east and west, between the Alleghany and the Lakes, on the one side, and the Delaware on the other; or was it chiefly intended for the readier and cheaper transportation to the market of Philadelphia of the various produce of the rich counties of Chester and Lancaster? After it shall be decided which of these objects is the most important, to the accomplishment of that object the plan must be made to conform. Upon this point the committee believe there can be no doubt. The great resources of the State could not have been appealed to. Three millions of the public money would not have been expended to facilitate any intercourse of a local and limited character. If a state is ever justifiable in undertaking a great work of this kind, it can only be where the benefits are to be general, and where the advantages of them can be felt in the remotest corners of her territory. In looking back to the history of our public improvements, we obtain proof that this was really the object first had in view. The public-spirited citizen, who for so many years devoted his time and his best abilities to the promotion of the improvement of the State, and who has, in a measure, identified his name with them, appears to have been the first who brought the subject before the Legislature. In H. R. vol. 1. 1826—7, we find that on the 21st of March. Mr. Lehman introduced the following resolution :

"Whereas the State of Maryland has incorporated a company, with a view of intersecting the Pennsylvania canal, for the purpose of conveying the trade of Pennsylvania to Baltimore. And whereas, &c.—Therefore,

"Resolved, that the committee on inland navigation and internal improvement be instructed to consider the expediency of requiring the board of canal commissioner to make suitable examinations, within the present year, with a view to the aforesaid objects, and to make report early in the ensuing session of the Legislature; and also to make report in relation to the practicability and probable cost of a railway along the valley of the Susquehanna, from the Pennsylvania canal to Columbia, and

from thence through the city of Lancaster to Philadelphia."

And in their report of December 28, 1827, the canal commissioners observe, that they believe that a communication from Columbia, by railway, to Philadelphia, is decidedly preferable. Regarding this railway as an important feature in the system of improvement, they have been gratified to find, that from the bank of the Susquehanna, (for surmounting which a stationary engine will be required,) the limit of graduation for locomotive machinery may be preserved the whole distance to the city of Philadelphia.

Thus, it is evident that this road was undertaken with a view, principally, to facilitate the great eastern and western trade, and that no system should be adopted which can, in any manner, impair its usefulness in this respect; and the great object being the reduction of the price of transportation for heavy and bulky articles of comparatively little intrinsic value, but carried from remote parts of the State, no regulation should be made which may in the least create a tax upon this trade, by increasing the price of transportation upon the railroad. It behoves the Legislature to bear in mind, that the lumber, the coal, the iron, the grain, the flour, the salt, the whiskey, &c. &c. of the west, are all articles of comparatively low price, many of which now struggle with difficulty in the port of Philadelphia, against the importation from eastern or transatlantic ports—and that any regulation tending to check or to impede transportation, or to raise the price of freights, is a direct tax upon the trade, upon the industry, whether agricultural, commercial or manufacturing, of Pennsylvania, injuring our means of competition with foreign industry, both at home and abroad. It is a bounty given to the foreigner, without any equivalent to ourselves. Let us, therefore, in the system of management of our road, discard every prejudice, whether resulting from preconceived ideas, or from local interests, and view the question in its broadest light, as one affecting the whole industry of Pennsylvania.

The great objects of transportation are economy, rapidity, and certainty; and to these three items all others should be made to yield.

1. What kind of power should be used on the road?

2. Whether it should be a high road or not?

3. By whom the motive power should be owned?

4. By whom the cars should be owned?

After which, we shall be able to arrive at safe conclusions as to the provisions of a law to regulate transportation on our roads.

The first question is, as to the power? Two kinds may be used, animal or mechanical, horse or steam power. If we examine the profile of the Columbia railroad, we will find its grade constantly varying; part of it ascending and another part of it descending; varying through every grade, from a dead level to an inclination of forty-five feet per mile. This naturally leads us to the conclusion that the power must be such that it should pass with equal facility (though with varying rapidity) through all the changes of grade, of an ascent of forty-five feet per mile, or a descent of the same steepness; and it is evident that no horse power can effect this. He cannot drag up hill the same weight that he can drag down hill, unless the load be much less than a maximum, in which case there is a great loss of power, and great additional expense. It has been suggested that the power might be increased, by having spare horses stationed along the line, at such points as would present additional resistance; but this is inapplicable in a road presenting so many and such varieties of grade as the Columbia railroad.

Again. It is well known that scarcely can two horses be found possessed of the same speed. All the horses must be made, however, to travel at a uniform rate upon a railroad, and as the load cannot be shifted according to the ever-varying strength of each, it follows that

the average will occasion great injury to the weaker horses, while the stronger ones will not work at their maximum of strength, which of course produces an additional expenditure.

This evil is more sensibly felt in proportion to the increased length of the road; as the engine (while supplied with fuel and water, and well oiled,) continues to work for any reasonable time without injury or impairment of its effect, while the power of the horse is constantly impaired by the fatigue of his muscles, until at last it becomes necessary to relieve him, which occasions much loss of time. In point of speed, likewise, great advantages are derived from the use of locomotives, since their rate of travelling on such a line as the Columbia railroad, with the heaviest load, need not be under ten miles an hour, when a horse should not, when loaded, travel faster than two and a half miles to produce his maximum of effect.

Reasoning from analogy and theory, we conclude that horse power should not be used where locomotive engines can work with safety. Experience confirms this position.

There is scarcely a railroad of any extent, admitting the use of steam power, in which it is not chiefly or wholly used. In England, the Liverpool and Manchester, the Stockton and Darlington railroad, and others, the St. Etienne and Lyons road in France. In the United States we have, as instances, the Baltimore and Ohio, the Baltimore and Susquehanna in Maryland, the Petersburg and Roanoke in Virginia, the Charleston and Hamburg in South Carolina, the Newcastle and Frenchtown in Delaware, the Camden and Amboy in New Jersey, the Hudson and Mohawk, and the Schenectady and Saratoga railroads in New-York, and in our own State the Philadelphia, Germantown, and Norristown railroad, and the Little Schuylkill railroad,—on almost all of which horse power was at first used, and on which it has since been in part, or wholly, replaced by locomotive engines with great advantage. It is understood that on all these roads, engines will be used exclusively in preference to horses as soon as the necessary arrangements can be made to dispense with the latter.

Upon this point the committee are also permitted to refer more at large to the experience obtained on a road in this Commonwealth, upon which a large trade was carried last summer, and experiments carefully made, with a view to ascertain the comparative expense of transportation by engines and by horse power, and in which there was a decided advantage in favor of the former, even after making large allowances for the expense of repair to the road and of deterioration to the engines. Although the committee would not feel themselves at liberty to exhibit, in a report of this kind, facts which were communicated to them for their own information, in relation to the operations of a private company, they are enabled to state that, after making all reasonable allowances, the expense by horse power is at least one-third greater than that by engines, and that after the improvements suggested by experience shall be introduced, the economy will probably be much greater. The road does not suffer materially from the use of the engines, and the transportation is more regular, systematic, and under control.

The opinions of experienced men have been obtained upon this point, and while it would be easy to adduce the authority of many persons, they will be satisfied with referring the House to the letter of Moncure Robinson, Esq., addressed to a committee of this House last year, and which is attached to this report, and to the opinion of the canal commissioners, as expressed in a special report lately made to the Senate.

The single item of economy in the making and keeping in repair of the horse-path, is an object worthy of attention. The making of the horse-path on sixty miles of double track is estimated by the canal commissioners at eighty-five thousand dollars; and the annual expense of repair of horse-path is estimated by Mr. Gay at three hundred dollars per mile per

annum, or a yearly expenditure of upwards of twenty-five thousand dollars, which will be rendered entirely unnecessary by the use of steam power.

Nor is there any reason to apprehend that the curves on the Columbia railroad will interfere with the security of engines, as the curves between the two planes are larger than those on other roads upon which such engines are successfully used.

The next inquiry is, whether they should be considered as high roads or not? The committee come to the conclusion, that the high way principle is entirely inapplicable on a road upon which a large trade is intended to pass, and that the exclusive use of locomotive engines makes it inexpedient as well as improper to open it as a high road. Upon this point, the committee are aware that an impression has existed with many, that the high way principle is the old and established system, and that the attempt to restrict it is an innovation. This is entirely an erroneous impression. If railroads were in every respect analogous to turnpike roads or canals, the opinion might be correct; but differing as they are entirely in their construction and use, the position is untenable. We are, on the contrary, justified in asserting, that no railroad of any great length, or of great travel, has ever been so considered. In England all the railroads in use, except the Surry and Croydell, are used exclusively by the companies that own them. It has not been in our power to procure the charters of many of the railroad companies of this State, but we can cite many in which the exclusive principle is distinctly admitted; and these will be found to include most, if not all those which are now extensively used: such, for instance, as the Baltimore and Ohio, and the Baltimore and Susquehanna railroads, the Newcastle and Frenchtown, the Petersburg, the Chesterfield, the Charleston and Hamburg, the Mohawk and Hudson, the Saratoga and Schenectady, &c. Moreover, the same principle is distinctly recognized in the Mad River and Lake Erie railroad company's charter, and in several others before us. We are, therefore, warranted in the assertion, that the legislation, not only in Great Britain, but also in New-York, Ohio, Delaware, Maryland, Virginia, and South Carolina, distinctly recognise the impossibility of admitting the high way principle. The committee refer the House to the previously published opinions of the canal commissioners, of Mr. Gay, &c. and would chiefly invite the attention of the House to Mr. Robinson. In practice there is no road of any length which has been found to answer on the high way principle. The best instance is unquestionably the Minehill and Schuylkill Haven railroad, whose length however is only ten and a half miles; and which being used only for a descending coal trade, horse power offers no analogy with a great State improvement like the Pennsylvania railroads. In England, we know of but one road that is a high way—it is the Surry and Croydell, which is a tram road, (not a railroad,) and which has never been either productive or valuable.

On the high way principle it would be impossible to secure a constant, expeditious, and cheap transportation for all goods coming to Columbia. Transporting companies might probably be formed, who would attempt to carry the whole produce from Pittsburgh to Philadelphia, and whose object and interest it would be to drive off all competition. The great out-lay of money required to keep up a constant line of engines and cars on the road, would soon throw the business into very few hands, over whom there would be neither check nor control. All the evils of a monopoly would exist, without any of its advantages—while all the evils of competition might still continue; an occasional understanding between companies would produce great fluctuations in the prices of freight and transportation, coming on suddenly and taking the distant unawares. This is not a gratuitous supposition—we have seen

these fluctuations upon every high way in the United States. The accidents which occasionally occur on our turnpike roads, by the racing of stage coaches, would recur with the more frequency on our railroads, on account of the greater dangers resulting from carelessness or inattention. The strictest police could not guard against them; as it would be impossible to determine, with precision, the causes of accidents, and the persons through whose agency they had occurred. Instances might be mentioned, from the personal experience of your committee, in which trains of cars travelling in the same direction, on the same road, and belonging to the same owners, have, by the inattention of their drivers, been suddenly brought into contact, occasioning loss of property and death to horses, or damage to engines. Such cases are more likely to occur where the property would be owned by different individuals.

An attempt at a strict police, on a high way, would be in truth ineffectual; but it would be attended with a great deal of petty litigation, of heart-burning, or real or alleged injustice or oppression.

By placing the business under one management, the utmost economy could be obtained; and of course the trade of Pennsylvania would be benefitted, and the travelling on the road greatly increased.

Having come to the conclusion that the use of horses ought not to be permitted, and that the highway principle is inadmissible; the committee proceed to inquire, in the third place, by whom should the motive power be owned? Two plans have been offered, both deserving of great consideration. The one, to place it in the hands of the agents of the State; the other, to farm it out to contractors. At the first blush, it would seem that the former were the more desirable. It strikes the attention, as the fairer and the more efficient mode: that which keeps the control of the road most in the power of the State. If there must be a monopoly, all would be disposed to yield it rather to the State than to an individual. But the advantages are rather apparent than real—the plan is more plausible than substantially good. On the continent of Europe all agencies of an analogous character are in the hands of government. In Great Britain they have with more propriety been placed in those of a contractor; and in this country we have, in cases nearly parallel, found great advantage in farming out such undertakings. No better instance can be found than in the post-office department. It was at one time thought, and we believe attempted, to have the mail transported entirely by the United States. It was soon found, however, that all the advantages resulting therefrom would more readily attend short contracts, say for 4 years. There is more economy. Individuals working on their own account, under a strict supervision, are obliged to pay more attention to it than could be obtained from salaried officers. The difficulty of the selection of proper officers, the dangers from an increase of patronage, the want of a balancing or checking power to prevent injustice, are among a few of the evils incident to the conferring this duty upon salaried officers. For such men, there would be no motive (exclusive of a sense of duty) to produce an increase of travel on the road; since the more frequently it was used, the greater would be their duties, without any additional compensation.

With a contractor, the case would be different. To him the increased travel or transportation, would be a source of increased gain. It would be his duty to procure assistance on the best terms, and of the best kind. His own interest would soon satisfy him that no imperfect cars or engines, no new and untried inventions, green from the brain of the inventor, could be advantageously applied on such a road. In the hands of such a contractor, it would become a matter of business, not experiment. Closely superintended in the execution of his contract, by a proper officer appointed by the

canal commissioners, under the sanction of the Governor, there would be every desirable security for the proper use of the road. The State engineer would act as an umpire between the public and the contractor, and his decision might be with or without appeal. In order to make this plan unexceptionable, it merely requires that the duties of the contractor should be carefully pointed out to him, and that the execution of the contract should be strictly enforced. The amount to be charged per ton per mile, for all kinds of goods, being specified in the contract, and he being bound to carry it for all on the same terms, a maximum price of transportation might be obtained, advantageous to the whole state. Having the exclusive use of the road, it would be made his duty to keep a register, in which all goods should be entered, in the order in which they were presented for transportation; and he should be bound to transport them in the same order, and within a certain time fixed in the contract; which would insure impartiality and celerity to the transportation of goods. Any neglect or omission would be reported to the engineer, whose duty it would be to see justice done and the contract duly executed, or the penalties thereof enforced.

There is in such a contract, offered to the highest bidder and open to all applicants, no injustice or hardship to the community at large. It is consulting the public good, to establish such regulations as will make the road most useful. Such a contract would be analogous to a mail contract, of which no one complains as an arbitrary measure of government. There is as yet no common law in relation to the use of railroads—there can be no rights acquired at common law to provide for. The State has made a railroad at an immense expense, and has a right to say in what manner it shall be used.

4. The next question is, by whom the cars should be owned? It has been recommended, and from respectable sources, that while the motive power could not be in the hands of every one, the cars might be owned by individuals. This the committee regret to dissent from. Nothing could be more unjust, than to throw either upon the Commonwealth or upon individuals, the expense of dragging cars which were not made of the best materials or in the best manner. Any one acquainted with railroads and cars must know that the power required to draw one car, sometimes is two or three times as great as that required for a car of apparently similar construction, and coming out of the same shop. If the cars belong to the owner of the motive power, it will be his interest to find out and correct the deficiency of the hard running car—but if they belong to individuals, no such interest exists; and provided the inspection on the road can be passed, each will be anxious to make cars after his own peculiar notions of economy or fitness. The inspection of a car, when finished, is not an easy thing—nor can it be a satisfactory one, unless it be taken to pieces. It must be an inspection of parts; an inspection of materials before they are used; an inspection of workmanship as it proceeds in the shop, which can alone insure a good running car. If the owner of the motive power also own the cars, he may have his own shops, his own foremen, and insure a proper construction of cars.

Again, nothing is more injurious to a road than a badly running car. It may press against the curves—it may injure the rails, &c. If the cars belong to the owner of the motive power, the inspection and control of the state engineer becomes easier and more effective; but if his attention be divided by numberless petty workshops along the road, his superintendence must of course be less efficient. Again, suppose an accident occurs in the breaking of an axle or wheel, on the road, while travelling at great rapidity with steam power, on whom is the loss to fall? It may have resulted from the wilful use of inferior, but cheaper materials, which the sordid economy or ignorance of the maker

of a car may have told him was "strong enough" for the purpose, while no other person would have thought of using it. Such accidents may occur—much property may be injured—lives may be lost—the road materially impaired—while the unconscious individual was merely trying an experiment as to the sufficiency of some iron in his shop.

If the cars belong to the owners of the motive power, there is a remedy. Let him be made, by his contract, the insurer for the safe delivery of all goods entrusted to his care—the insurer against all risks whatever, whether from accidents of the engines, from combustion of the goods, from damages by the breaking of cars, from robberies or neglect on the road. It will be his interest then to avoid such accidents.

Such are general principles which in the opinion of the committee should guide in making a contract of this kind. The duration of the contract is a matter of doubt; they have fixed it at the shortest possible period, say three years, with a clause, that if at the expiration of that time a new contractor should outbid the former, or if the state should refuse to continue to let the road out, then the new contractor or the state should be bound to take the property in the possession of the contractor, such as engines, cars, &c. at a fair valuation or appraisement, if he should so require it. Such terms are in all mail contracts, and present no novelty.

Were the road finished and of established character, and could we hope to get at once good proposals for it, the committee would cheerfully have extended the lease; but as the first term must necessarily be an experimental one, it has been thought best to make it as short as possible, consistent with obtaining any bids. The committee doubt not that there is already forming, in this country, a class of men experienced in the use of railroads, who, backed by some friends, will become regular bidders for such contracts hereafter, in the same manner that a class of experienced and respectable mail contractors has been formed in every part of the country. While we admit the propriety of having almost all public works done by contract, as being the cheapest, most satisfactory manner, the committee do not see why the use of railroads alone should be exempted from this system.

The bill which they herewith report, differs but little from that reported by a select committee, and which passed this house last year, but was lost in Senate, from the lateness of the season.

It makes it the duty of the Governor to advertise for proposals, and should he receive satisfactory ones, to execute a contract for the use of the road, with the highest and best bidder—the terms of the contract to be previously prepared by an experienced engineer, to be appointed by the canal commissioners, and to be thrown into proper legal form by the Attorney General; the whole being revised and approved of by the Governor. Should the Governor, however, receive no satisfactory bids, (of which he is left the sole judge,) then he is to appoint one or more agents of transportation, whose duty it will be to provide the necessary engines, cars, &c., and attend to the transportation, on such terms as the canal commissioners, under the direction of the Governor, shall fix and determine.

In the meanwhile, the bill authorizes the canal commissioners to consult some experienced railroad engineer, as to the location of water stations, warehouses, &c., and under his direction to cause the same to be erected; and also authorizes them to purchase or contract at once for the manufacture of six locomotive engines, to be completed as soon as possible, and which, when completed, they are to transfer to the contractor at cost, should any contract be made.

The committee were aware of all the difficulties with which the subject is beset, and they have endeavored to steer clear of the most

formidable ones. They have trusted to experience, wherever its results could be obtained. They have consulted the most eminent engineers in the country, and they now submit the whole subject to the Legislature, conscious that as no perfect scheme can be advised at first, it is best to adopt, in the outset, such a plan as, in its future modifications, will involve least sacrifice of private property, and fewer claims for remuneration for damages to the same.

AGRICULTURE, &c.

Description and Drawing of Hussey's Grain Cutter. Communicated by the INVENTOR.

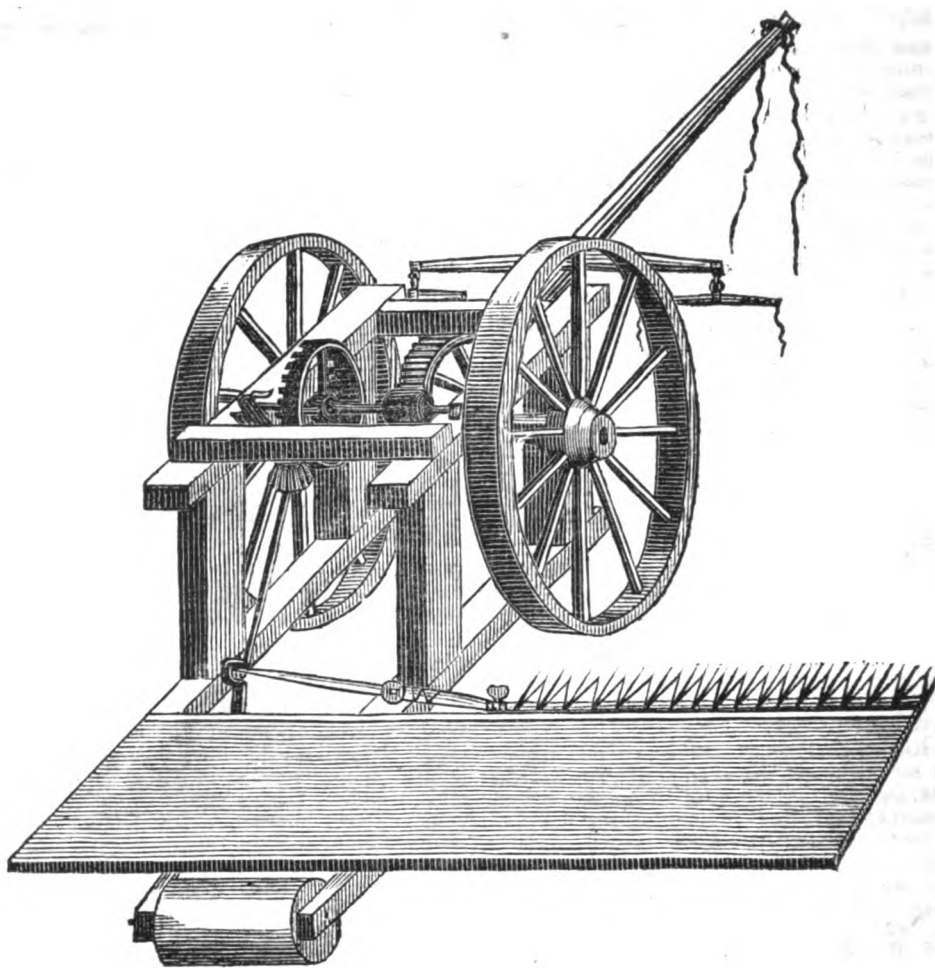
[We have seen one of Mr. Hussey's grain cutters, manufactured in this city by Messrs. R. Hoe & Co. It is a simple, substantial machine, and from its construction and the perfect manner of cutting a little artificial field of grain, we would add our own recommendation to that of the respectable names in the certificate. The inventor is about taking it into the grain regions of the western part of the state, to exhibit its operation at the next harvest.]

This machine consists of a frame of good oak or ash, sustained by two wheels forward, and one wheel or roller in the rear, and is constructed in the following manner: Two sills are connected by several cross rails; on these sills are fixed four posts; two top rails are framed to the tops of the posts, parallel with the sills, and connected also with cross rails, as seen in the plate. To the forward posts is hung the main axle, with journals running in metal boxes: on this axle the wheels are fixed with square boxes: these wheels sustain the forward part of the machine, and furnish the cutting power. Across the rear ends of the sills is fixed a plank floor of good pine, extending several feet beyond the right wheel. This floor is horizontal, and its distance from the ground will be the length of the stubble. On the front edge of this floor is fixed a row of iron teeth, pointing forward horizontally, forming a comb: the teeth are formed of two parts, one part above and one below, and joined at the points, forming a range of mortices, through which runs a saw with the teeth sharp on both sides: this saw is moved by a crank which receives its motion from the main axle.

Two horses are attached to the machine and driven on the stubble, when the teeth are presented to the standing grain, which they receive between them, as the saw with a quick motion cuts it off, the morticed teeth forming a bearer above and below the saw. The velocity of the machine, while cutting, gives an impulse forward to the butts of the straws, causing the grain to fall backwards on the floor. As it accumulates on the floor, it is deposited or pushed off in heaps with a rake formed for the purpose, by the operator, who rides on the machine.

H. Huxley & Co., 81 Barclay st. New-York, are agents for selling the above machine.

This may certify, that we, the undersigned, members of the Agricultural Society of Hamilton county, state of Ohio, at the request of Mr. Obed Hussey, attended an exhibition of a machine for cutting grain by horse power, invented by him. The experiment was performed at Carthage, in this county, about the first of July last, before a large company of spectators, composed of farmers of the neighborhood, the citizens of Carthage, and several from Cincinnati, who appeared to be united in the expression that it was a valuable improvement in agriculture. In our opinion the experiment was completely successful, although several impediments occurred during the exhibition by the breaking of some weak parts; these obstructions were plainly to be attributed to the imperfect manner in which the machine was made, it being a first experiment, and experi-



ence not having yet taught how to proportion the strength of the several parts to meet the stress which each part might be subject to, on its trial, some pieces being of wood, which should have been of iron; but we have no doubt but all these imperfections can be remedied in a second machine. We were satisfied that the impediments referred to were not to be ascribed to any defect in the principle, for, while the machine was in operation, the performance was complete, until some part broke by the violence to which it was subjected, it having two horses attached to it, and they several times driven on a brisk trot; at this speed the grain was cut as well, or better, than when the horses were driven slow. The machine performed well, both at the rate of two and a half and five miles per hour; and although the horses were several times urged, they were not driven so fast at any time as to determine at what speed the machine might be moved, and do good work. The wheat was found to be cut much cleaner, and to be left in better order for binding, than when cut by the cradle. The saw which cuts the grain was made without a temper for cutting, consequently would not continue sharp long at a time; but no difference was perceived in the execution, the grain being cut equally clean, and fast, whether the saw was dull or sharp. This was attributed to the peculiar construction of the cutting apparatus. With regard to the quantity of grain which the machine is capable of cutting in a given time, we can only say, that we saw the machine move at the medium rate of three and a half or four miles per hour, cutting a swath five feet three inches wide; and we have no doubt but the machine may be extended with advantage to a half a rod in width on ordinary smooth ground. In this case the machine would pass over one acre in going the distance of one mile. From the general satisfaction expressed at the exhibition alluded to, and our own impressions, we would recommend Mr. Hussey's grain cutter to the notice of all grain growers, being satisfied ourselves, that if future

trials should equal the first experiment, it will be a valuable improvement to all large farmers.

D. C. WALLACE, Sec'y of the
Hamilton Co. Ag. Soc.
J. D. GARRAND,
CALVIN CARPENTER.

I was present at the exhibition of Mr. Hussey's grain cutter, and concur in the statement of D. Wallace and others. The impediments referred to by them were in one instance caused by the loosening of a cog wheel by loss of the wedges, the other by the breaking of a two-inch wood screw, where a strong bolt should have been used. But for these two casualties, I am of the opinion that the machine would have performed without interruption. The performance of the machine while in operation was complete and satisfactory. I have since that time seen a machine on the same principle, constructed by Mr. Hussey, in a strong and durable manner. I have no hesitation in recommending it to be a valuable improvement.

T. B. COFFIN.

[From the New York Farmer.]

LANDSCAPE GARDENING.—From the Report of the Visiting Committee of the New-York Horticultural Society for 1823, we make an extract. The subject still needs the encouragement of the Society.

"With regard to landscape gardening, the Committee have to report that, from the examination which they were able to make in the vicinity of this city, they are of opinion this part of horticulture is yet in its infancy among us as an art. The art of laying out grounds, so as to display all their beauties and conceal their defects, is a subject of much interest in Europe, where large sums are expended in embellishing the grounds surrounding the dwellings of the proprietors. There the profession of landscape gardener is common, though almost unheard of among us; a pro-

fession requiring the practical gardener's skill, with a knowledge of the qualities and nature of forest trees, their capacity for picturesque effect, either separately or in groups, a correct taste in selecting natural or creating artificial beauties, and a practised eye in discriminating the varied features of natural scenery. With these qualifications, the landscape gardener has tracts of land of considerable extent and diversity to operate on, assisted by all the resources which the wealth and taste of the proprietor can supply. The grounds attached to the country residences of our citizens are usually too limited to give much opportunity for the display of this style of gardening, and are generally appropriated to the more useful and profitable purposes of the kitchen garden, or the orchard, a small portion near the dwelling being reserved for parterres. There are, however, many beautiful sites in the neighborhood of our city, particularly those which border on our waters, in which a fine effect might be produced, by a proper application of the principles of this branch of horticulture. For improvements in this, as well as in the preceding departments, we must depend upon the greater diffusion of wealth among us, and the consequent greater leisure and opportunities for devotion to the pleasures of such pursuits. It is the legitimate province of our society to accelerate the progress of improvement in this respect; and the committee would beg leave to recommend the subject to their attention, as worthy of the same encouragement which the Society offers to the other branches of horticultural skill.

A. HALSEY, Chairman.

"New-York, January 27, 1829."

MAPLE SUGAR.—We give the following on this subject, although for the present the time for making the sugar will be past before this number reaches our subscribers :

"In the northern and western sections of this state, particularly in the counties of Jefferson and Lewis, the inhabitants are very laudably engaged in transplanting these trees into orchards, and along the lanes and roads. In the town of Lowville, one farmer has an orchard of six hundred trees. Those growing on low, wet lands, are not as productive of sugar as those on upper lands. The latter may be known by the roughness of the bark, and by growing to a larger size.

"The trees are tapped when about eight or ten inches in diameter, and will, at this period, produce from three to six pounds of sugar each season. Very large trees have been known to produce fifteen pounds. The sap or juice of these trees may be converted either into sugar or well flavored molasses. The best method of obtaining the sugar is to have the buckets perfectly clean; and when sufficient quantity of the sap is collected for boiling, it should be strained through a woollen cloth into the evaporator. The best evaporating vessel should be about four by six feet long, and eight inches deep; the bottom of sheet iron, and the sides of wood, set in mason work, so as to protect the sides from injury by fire. The advantages of this construction are, rapid evaporation, by having the surface of the fluid very great in proportion to its depth, consequently a saving of fuel, and preventing that blackness which is communicated to the sugar when boiled in a vessel entirely of iron. After the fluid is boiled to the consistence of West India molasses, it is allowed to cool, and then strained through fine flannel. It is again put over a gentle fire in a clean vessel, with a quantity of fresh blood well mixed with it. The blood will coagulate, and rise with the impurities to the top, which are carefully skimmed off. After this, a slow evaporation is kept up, taking care not to burn the sugar, until it is sufficiently done to granulate, which may be known by its granulous effect on the tongue. Most people, however, have various and peculiar methods of ascertaining its crystalline state.

It should now be removed from the fire, and stirred until cool, when it will be composed of large sparkling grains. The sugar made by this process is found to be far superior to that made in the common way of running it into moulds or cakes, and is susceptible of high refinement."

ASPARAGUS.—There are several varieties of the garden asparagus, as the large German, the red and green topped, the Battersea, Dutch, large Reading, &c. The large German red, and green topped, are considered preferable.

Asparagus is propagated from seed, but is often increased by offsets from the old roots. Beds are thought to succeed best when set with young seedling plants; but the shoots will not be ready for use as soon as when set with offsets. The seed should be sown early in May, on a bed of light rich garden soil.

They may be sown quite thick, and allowed to grow in the bed one summer.

In the fall, or early in the spring, a bed should be formed in some part of the garden, where it is intended it shall remain, by trenching it eighteen inches deep, and mixing with a suitable quantity of manure. Some prefer beds of only two and a half feet wide, calculated for two rows, set at eighteen inches distant; others form their beds four feet wide, and set three rows at the same distance. But of whatever width the beds are made, the roots should be placed at least eighteen inches distant from each other, and should be placed nearly on a level with the walks between the beds. After the roots are placed upon the beds they should be covered over about four inches deep with fine loose mould. The first year after setting, asparagus should be allowed to grow without cutting, and in the fall, after the frost has killed the tops, they should be cut off, and the bed covered over three or four inches thick with stable manure. In the spring following, the manure should be made loose with a fork, but allowed to remain upon the bed, that the young shoots may be blanched a greater length. The soil and litter should ever be kept six or eight inches thick over the crown of the roots. When good strong plants are set they will produce shoots fit for cutting the second year after setting. The young shoots may be cut until the middle of June, after which they should be allowed to grow up for seed. In selecting plants for setting, none should be used which have not a good crown or bud, as the lateral roots, or those destitute of buds, will not sprout, although they will remain in the ground many years without rotting.

In cutting asparagus, care should be taken not to injure the buds upon the crown, which are close to the lower end of the shoot; for this purpose a knife with a narrow point should be used, which should not be allowed to go as deep as the buds. When a bed of asparagus is well planted, it will continue to produce well for twelve or fifteen years, and when it is found that the shoots decrease in size, a new bed should be formed before the one is taken up, that the family may be constantly supplied with this wholesome vegetable.—[Goodsell's Genesee Farmer.]

GRAFTING AND SETTING OUT TREES IN THE SAME SEASON.—In the spring of 1830, I bought thirty trees of a different size to set in my orchard. In digging up the thirty large ones, we dug up a considerable number of small crooked things that were not worth any thing to the owner; I therefore obtained about

sixty from the nursery. They were of all sizes, from the bigness of a pipe-stem to that of a man's thumb. I carried them home and put them in a barn. The next day being rainy, I went to work and grafted them. As soon as it was fair weather, I had them set out in rows, each kind by itself. The result was, that upwards of fifty grew and did well. The large ones were set out, and I engrafted them; some the same day, and some a few days after, and they did as well as any scions that I ever set.

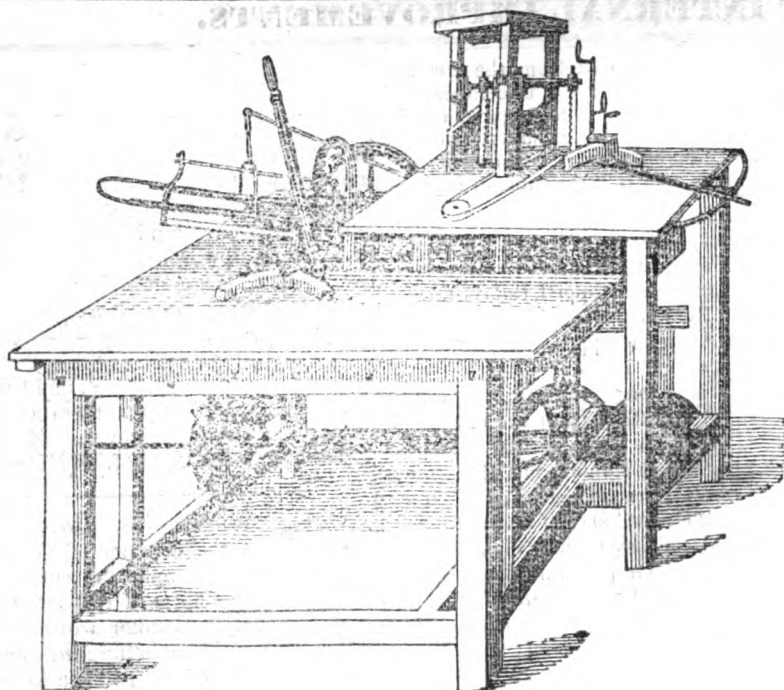
Let trees be properly set, and I would then graft them and warrant them as cheap as I would any trees whatever. Z. SARGENT. Gardiner, March 2, 1834.—[Maine Farmer.]

CANKER WORMS.—Mr. Goodsell: Permit me, through the columns of your paper, to communicate a simple and easy method of destroying the effects of that great enemy to our orchards, the canker worm. Six years since, while walking in the forest and examining the capsules of the *Castanea Americana*, or chesnut burr, the idea struck me that they might be applied to advantage in preventing the effects of the canker worm. I took a piece of strong twine and sail needle, and made a band of them, placing all the backs one way, which caused the spines to project in all directions; I tied it round the trunk of an apple tree in the centre of an orchard that was much injured the year before, which bore abundantly without the leaves being injured in the least, while those around were all ruined for that year.

I have since tried it several times with entire success. A set of bands will last many years if taken off when the insects have done ascending, and secured in a dry place. I have usually put the bands on the trees about the middle of March.

In sections of the country where chesnut burrs are not easily obtained, I would recommend the use of the *dipsacus fullonum*, or fuller's teasel; although I have never tried it, I have no doubt it would make a sufficient barrier to prevent the ascent of the canker worm. NATHAN RUGGLES. New-Haven, (Ct.) Feb. 26, 1834.—[Goodsell's Farmer.]

TO PREVENT BEER FROM BECOMING ACETOUS.—There is a way to prevent beer from getting acetous, or what is called hard, which is as simple as it is efficacious. Reasoning on the plain principles of chemical science, we were led to try it, and have this summer found its truth and advantage. It is nothing more than to suspend a knob of marble by a piece of tape from the bung hole to near the bottom of the barrel, upon which, being pure carbonate of lime, the acid quality of the beer acts on its incipient formation: it consequently becomes neutralised, and thus is kept from turning hard or sour. In our experiment the marble was considerably eaten away, except where the tape encircled, and the beer remained sound and fresh to the last drop. We mention this discovery as being a point of some consequence to householders, and especially to farmers and their laborers in harvest time; for it is more likely that weak beer should become sour than strong; it is much more healthy to drink it fresh than ever so little turned off, and, in the way of economy, many barrels might be saved, which are every year thrown into the hog-tub from becoming undrinkable. It will do good, however, to every species of beer, and, we expect, to any kind of home-made or even foreign wines in cask, which have or are likely to become tart or sour.—[Oxford Journal.]



HAMILTON'S SAWING AND BORING MACHINE.—This machine is designed for sawing and boring wood or timber, and is claimed by Colonel Hamilton in his specification to be "*an improvement in the mode of sawing felloes of wheels, circular and curved segments, mitre joints, tenons, and also boring of felloes and hubs of wheels;*" and generally for sawing circular, curved, and plain surfaces.

The machine is propelled by a two horse power steam engine. Animal or water power may be applied for the same purpose. The particular form required is sawed out of the timber with perfect accuracy and great expedition, by means of one or more thin narrow saws moving up and down. There is also belonging to this machine a horizontal saw for cutting segments of circles their proper lengths, and with proper inclinations for joints, tenons, &c. &c. Hubs of carriages are bored with perfect precision. All these operations are effected by the changing position of the material, accommodating itself as it comes in contact with the saw or auger, so as to receive the exact form, inclination, &c. required. Every thing is done, without marking or laying out, with mathematical accuracy by means of scales, which are distinctly laid down on the machine.

The machinery which guides and steadies the material in its movements may be readily varied, so as to form segments of wheels of greater or less dimensions; and the boring may also be more or less inclined. The scale indicates the exact position which the part of the machine that guides the material required to form a wheel,—for instance, of greater or less circumference. Slat and legs of chairs may be made of various lengths, and thicknesses, and shapes, as fashion or utility may dictate.

This machine affords a happy specimen of labor saving, and may be advantageously applied to a variety of useful purposes. It occupies but little space, only a part of a small room. No skill is required in using it. A mere laborer, or a boy, can learn in a few hours to use the machine, and to produce the article as perfect as the most skilful machinist. Like many other labor saving ma-

chines, it performs that part of the labor which the accuracy and strength of the human hand are incompetent rapidly, and with precision, to perform; it, in fact, does the work which is the most difficult and toilsome to the laboring manufacturer.

The expedition with which materials of small value, and with very little waste, are converted into articles of comparatively much greater value is entitled to particular notice. Chair backs sawed from our native curled maple are worth from *eight to twelve and a half dollars* per hundred.

By the aid of this machine, which costs only about *three hundred dollars*, a common laborer may do the work of twenty or thirty mechanics. The merit claimed by Colonel Hamilton consists chiefly in the facility and accuracy with which the material is adapted to the saw, so as expeditiously and uniformly to produce the exact form which is wanted.

METHOD OF DRESSING SKINS PRACTISED IN MAROCCO.—The following account of the method practised in dressing skins in Morocco was transmitted to the Zoological Society by W. Willshire, Esq., a Corresponding Member of that Society, in a letter dated Mogadore, May 5, 1838. Its results are stated to be excellent, as regards the preservation and color of the fur, and the flexibility of the pelt.

Wash the skin in fresh water to deprive it of the salt; as soon as this is done, scrape the flesh off, when take two pounds of alum, one quart of buttermilk, and two or three handfuls of barley-meal, which mix well together, and lay on the fleshy side of the skin equally; fold up and press it together carefully, and let it lie two days. On the third day take it to the sea-side, wash the skin well, and when clean and free from mixture, hang it up to let the water run from it: then take two pounds of alum finely powdered, and throw or spread it equally on all parts of the skin; again fold up as before, and allow it to lie three days, when it will be in a proper state to dry in the sun, laid flat, without taking away the powder. When it is dry, take a pint or two of fresh water, and sprinkle it upon the skin, and again fold it up carefully for about two hours, to imbibed the water; then lay it on a table, and, after scraping it free from the mixture and flesh, take a sand-stone (rather rough) and rub the skin well until it becomes soft and pliable, then hang it in the shade to dry. The process is then complete.

When the skin is perfect, having the head, horns, &c. take off the horns, and fill their cavity with a mixture of equal parts of powdered alum and ashes of charcoal dissolved in water, and expose them two days to the sun. Saturate the trunks of the horns with eight ounces of alum dissolved in water, and fold up with the skin, and apply the same on each occasion when employed in curing the skin. The flesh on the head and jaws to be carefully taken off, filling the same with powdered alum. It should remain in the sun until perfectly dry.

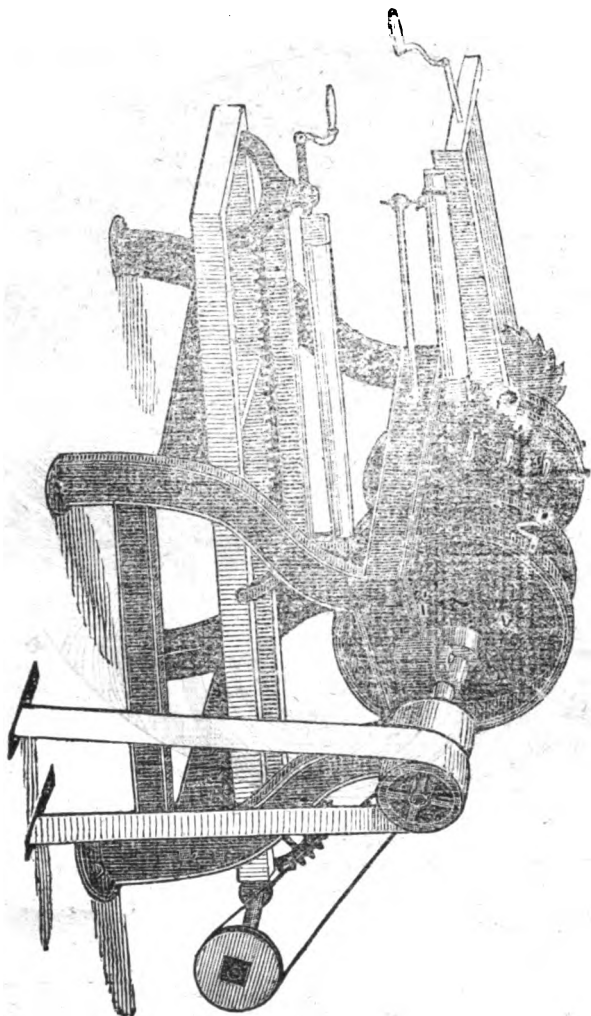
In addition to the foregoing description of the mode used in Morocco, in dressing skins, as related by the persons employed by Mr. Willshire, it may be well to observe that the process does not take so long at Mogadore, as Mr. W. has often received back skins of the Aoudad and Leopard from the dresser, on the third or fourth, and never exceeding the fifth day, perfectly cured. Allowance has been made by the dresser, in the foregoing description, for the difference in the climate of London.

The skins of smaller animals must not be subjected to so lengthened a process, or they will become harsh, and the pelt impoverished. —[Proceedings Zoolog. Soc.]

THE PRESS IN CHINA.—There is but one journal in the Chinese language in the whole Chinese empire; it is published at Peking, and is called the *King Pao*, or "Messenger of the Capital." It contains all the ordinances submitted to the Emperor for approval by the six ministers of Peking, and the various authorities of the provinces, as well as by the commandants of the military corps. The amount of subscription is a liang and an ounce of silver (about equal to twelve francs) per annum. The inhabitants of the capital alone have the advantage of receiving the paper every day at a regular hour; for, as China has no such establishment as a post-office, the country subscribers get their papers only as occasion may favor; consequently, those living at a considerable distance from the capital receive them very irregularly.

CAUSES OF INDIGESTION.—Among the chief causes of indigestion (says Dr. Wilson Philip, in his treatise on this disease,) which act directly on the muscular fibres of the stomach, are narcotic and other offensive substances received into it. I have found that although opium applied to the external surface of the alimentary canal and heart produces no sensible effect on their muscular power, applied to their internal surface, it produces the same effect as when directly applied to the muscular fibres themselves, impairing their power, unless the quantity be extremely minute, and instantly destroying it if the quantity be considerable. It is probable that other offensive substances acting on the stomach—tobacco, distilled spirits, strong peppers, those of an acrid or putrid nature generated in the stomach itself, &c., may also in the same way immediately affect the muscular fibres. It is not uncommon for a fit of indigestion to be induced by taking suddenly considerable quantities of iced fluids. Violent and repeated vomiting also debilitates the muscular fibres of the stomach. But of the causes which immediately affect them, the most frequent and powerful is morbid distention, the most common cause of which is eating too fast; another frequent cause being high seasoning and great variety of food, or such as particularly pleases the palate, by which we are induced to eat after the appetite is satisfied.

WISWALL'S YOKE CUTTER FOR DRESSING SPOKES OF WHEELS.—By means of a circular saw operating in connection with the cutter wheels, the timber is squared and cut to any length that may be required, and the tenons of the spokes are then formed of any required dimensions. The spoke being presented to the action of the first cutter, or ten-



on wheel, by hand, the tenon is formed in less than a minute, and the body of the spoke is dressed into shape and smoothly finished, first on one side and then on the other, by two operations, in another minute, more perfectly than it could be by any mere hand tool, though used by the nicest operator. No means of forming the round tenon which is to be inserted in the rim was exhibited. This, it is obvious, must be effected by a fourth operation. The whole machine is evidently capable of a more perfect construction than that examined by the committee; but such as was exhibited in operation is evidently a useful improvement, and a labor saving machine of great profit. It saves all the time which an operator by hand necessarily expends in judging by his eye of the exactness of the shape given, and to be gained by his tool, and may be operated in artificial light, when the laborer by hand would be scarcely able to judge of his own work. There is therefore much gained by the art of making wheels, which artists in that branch of mechanics will find profitable to themselves, as they can employ their journeymen more usefully on other parts of the wheel, and in adjusting them to each other.

EVERY NERVE APPROPRIATED TO ITS FUNCTION.—From this law of our nature, that certain ideas originate in the mind in consequence of the operation of correspondent nerves, it follows—that one organ of sense can never become the substitute for another, so as to excite in the mind the same idea. When an individual is deprived of the organs of sight, no power of attention, or continued ef-

fort of the will, or exercise of the other senses, can make him enjoy the class of sensations which is lost. The sense of touch may be increased in an exquisite degree; but were it true, as has been asserted, that individuals can discover colors by the touch, it could only be by feeling a change upon the surface of the stuff, and not by any perception of the color. It has been my painful duty to attend on persons who have pretended blindness; and that they could see with their fingers. But I have ever found that by a deviation from truth in the first instance, they have been entangled in a tissue of deceit; and have at last been forced into admissions which demonstrated their folly and weak inventions. I have had pity for such patients, when they have been the subjects of nervous disorders, which have produced extraordinary sensibility in their organs—such as a power of hearing much beyond our common experience; for it has attracted high interest and admiration, and has gradually led them to pretend to powers greater than they actually possessed. In such cases it is difficult to distinguish the symptoms of disease from the pretended gifts which are boasted of. Experiment proves, what is suggested by anatomy, that not only the organs are appropriated to particular classes of sensations, but that the nerves, intermediate between the brain and the outward organs, are respectively capable of receiving no other sensations but such as are adapted to their particular organs. Every impression on the nerve of the eye, or of the ear, or on the nerve of smelling, or of tastes, excites only ideas of vision, of hearing, of smelling, or of tasting; not solely because the extremities of these nerves, individually, are suited to external impressions, but because the nerves are, through their whole course, and wherever they are irritated, capable of exciting in the mind the idea to which they are appropriate, and no other. A blow, an impulse quite

unlike that for which the organs of the senses are provided, will excite them all in their several ways; the eyes will flash fire, while there is noise in the ears. An officer received a musket ball which went through the bones of his face: in describing his sensations, he said that he felt as if there had been a flash of lightning, accompanied with a sound like the shutting of the door of St. Paul's. On this circumstance, of every nerve being appropriated to its function, depend the false sensations which accompany morbid irritation of them from internal causes, when there is in reality nothing presented externally; such as flashes of light, ringing of the ears, and bitter tastes or offensive smells. These sensations are caused, through the excitement of the respective nerves of sense, by derangement of some internal organ, and most frequently of the stomach.—[Bell's Bridgewater Treatise.]

ARABIAN HORSE.—Perhaps the most remarkable point about the Arabian horse is the extraordinary smallness of the head and mouth,—so small, indeed, is the latter that you would think they might use a common tumbler for a water bucket.

Observations on the Prevailing Currents of the Ocean and their Causes. [From the United Service Journal.]—Continued from p. 216.

In considering the origin of the currents of the ocean, it must be kept in mind that they proceed from two distinct causes, and thus exhibit one of the most wonderful and provident effects to be seen in the order of the works of the Creator. Water and air, if left stagnant, soon become corrupt and unwholesome; and it is evidently a wise provision of the Almighty, which has furnished the laws by which a constant circulation and movement are kept up in both. In the case of the atmosphere, the circulation occasioned by the winds takes place, partly by means of the revolutions of the earth on its axis, and partly by the expansive nature of air when affected by the heat of the sun. The lower beds of the atmosphere are elevated into the higher regions by heat; and other portions of the fluid, rushing in to fill the vacuum, occasion streams of wind of various degrees of force. The seasons of the year, and the duration of the effects of summer and winter in various latitudes, also occasion similar currents of air more or less durable, according to circumstances. But in the case of the currents of the ocean, there are but two causes from which constant currents can primarily arise: one from the rotatory motion of the earth, from west to east, which causes an apparent current from east to west in the open seas near the equator; the other cause arises from the inclined position of the earth with regard to the sun, by which a greater evaporation takes place from the waters of the sea within the tropics, than in the more temperate and frigid zones; and on the other hand, a proportioned condensation of this vapor (in the form of rain, dew, and snow,) takes place in the latter regions, greatly superior in quantity to what falls, during the whole year, in the former. These effects of temperature are so vast, when viewed upon the scale of the whole earth, that the balance of the ocean would be deranged by them, thus losing water in one region and regaining it in two others. This want of equilibrium is, however, obviated by constant currents in the ocean, from the poles towards the tro-

pics.* In figure 1 of the following plate, (where the outer line denotes a supposed boundary to the atmosphere,) we see the vapors rising from the equatorial regions, and passing towards the poles, where they return to their parent deep, in the form of dew, rain, and snow. Thus restored to the ocean, they flow towards the tropics, and there chime in with the prevailing currents, in their course to the westward. In the central part of the same figure an idea may be formed of the effect of an intervening continent, in opposing its solid form to the fluids through which it is rapidly and constantly passing, with greater velocity than those fluids can possibly follow it. At 1, the equatorial current meets an opposing cape, which divides it into two parts: one flows pretty freely from the north-west, being kept, however, in its place by the north polar currents pressing towards it. It meets another projection at 7, still farther to the north; and after passing it, the stream is forced into its more natural position near the equator, and proceeds in its westerly course, after forming a great counter-current or eddy in the sheltered gulf at 6, where navigators would fall in, for days together, with what would appear, if viewed on a small scale, totally opposed to the theory now under explanation. Returning to the Cape at 1, we find the other half of the northern equatorial stream proceeding to the south-west, where it fills the deep gulf, or sea, at 3, and keeps up the waters there at a high level, on a principle which will immediately be explained. It cannot, however, make its escape in a body or current from this gulf, but, being confined by the southern division of the equatorial stream, a variety of eddies on a considerable scale are produced at 2. It is unnecessary to explain the figure further, by proceeding to the southern hemisphere, where similar effects are produced by nearly similar causes at the points 4 and 5; we may therefore proceed to explain upon what principle the level of the sea in the gulf at 3 is kept up at a higher level than the same surface in the bay at 6, an effect which is known to exist in several remarkable instances on the globe, and which, according to the theory, ought to exist in every situation similarly situated.

By fair analogy, we find that, in this, as in other parts of nature, what takes place on a small scale may also be looked for on a larger. Proceeding then upon this principle, and considering minutely the rapid and rocky course of a brook or river, we find that, so long as the water flows over a smooth and equal bed, the depth and surface of the stream are in all places alike, as in figure 2 of the plate. But when, on the other hand, a fixed and solid opposition is encountered, in the form of a projecting rock, derangement in the level instantly takes place, to a degree proportioned to the bulk of the opposing ob-

* It is probable, perhaps even certain, that heat has also a very considerable influence in keeping up the movement and circulation of the waters, but it is not likely that currents of great extent are set in motion by this cause. Water, like air, expands by heat, and contracts by a certain degree of cold, not, however, so low as the freezing point, for at that temperature ice is formed, and the formation of ice is always accompanied by violent expansion, so great, indeed, as to burst the strongest vessels, and to cause explosions like cannon, in the lofty glaciers of Alpine regions.

As warm water rises above the colder, (except in the extreme case of ice, which always floats,) and as currents and counter-currents are always acting horizontally, and then intermixing the fluids from the poles and from the tropics, it is obvious that an interchange must also be constantly going on vertically, in the waters of the ocean, and thus completing the circulation of which the great superficial currents, already described, are the leading cause.

Fig. 1.

Theory of the General System of the Currents both of aqueous and aerial Fluids.

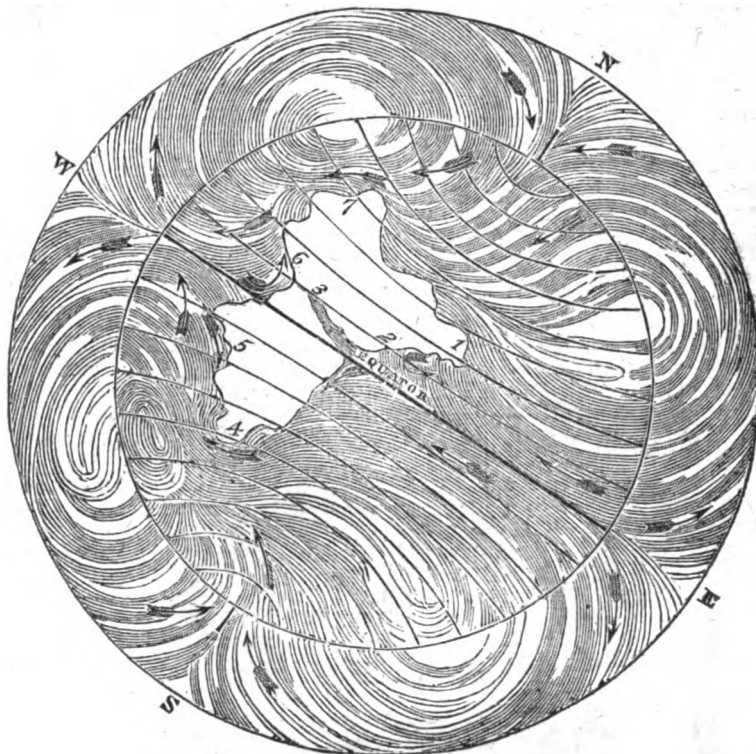


Fig. 2.

Unopposed Current.

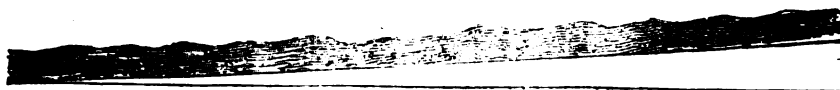


Fig. 3.

The Consequence of Opposition.



ject. An accumulation or rise in the water takes place on the upper side, until the current finds a vent at one or both extremities, and without this vent, the accumulation increases until the water flows over the top, when the difference of level above and below the object is at once apparent (see fig. 3). But supposing the impediment to be small, in every case, a change of level must be the consequence; and the recovery of tranquillity is only completed at some distance below the object, where it, at length, falls again into the general inclination. Beneath or behind this opposing rock, then, there is a sheltered nook, upon which the stream can only act in the form of an eddy; and in such nooks buoyant objects are often kept, as it were, imprisoned by the force of the stream on each side, and floating round in one continual circle. These eddies of the smaller rivers are equally well known to fish and fishers, as both are there sure to find their wished-for prey. Now, all these effects are to be expected on the great scale of the ocean current, as well as in the smaller instance of an inland brook. The streamward side of these mighty rivers will always be found on a higher level than the eddy side; and consequently the inland gulf at 3, (fig. 1,) ought to be considerably higher than the

waters in the bay at 6, which remains sheltered from the powerful action of the current. Thus the level of the Red Sea, which is filled and kept up by the action of a powerful stream across the Indian Ocean, was found, by the French engineers, to be so considerably higher than that of the Mediterranean, that much difficulty and expense would have been incurred in the canal which was once projected across the isthmus of Suez, in order to facilitate the communication with India by this route. A second instance of this effect no doubt exists in the gulf of Mexico, compared with the level of the north Pacific on the western coast of Mexico; but the actual difference of level has not yet been ascertained. A remarkable instance, however, of this difference of level, obviously arising also from the above cause, has been kindly communicated to us by Sir H. Douglas, who was then governor of New Brunswick, where it was found that, in a proposed canal intended to have been cut from the top of the Bay of Fundy to Bay Verte, in the Gulf of St. Lawrence, (a distance by land of only fourteen miles,) the difference of level of the two seas was no less than sixty-three feet,* the rise of the tide in Bay Verte being

* Surveyed by Mr. Francis Hall, and reported upon by Mr. Telford.

only seven feet, while that in Cumberland Bay, of the Bay of Fundy, exposed to the full force of the Gulf stream, was seventy feet. The Bay of Fundy is kept at this high level in consequence of the projecting peninsula of Nova Scotia impeding the current which rushes along that coast towards the north, and which, from the bend of the coast towards the north-east, is carried in that direction, leaving the gulf of St. Lawrence as a sheltered eddy or nook.

We may now proceed to a cursory view of the whole existing system of the currents, as far as the observations of navigators have made us acquainted with them; but in the rapid sketch which is alone consistent with the limits of a paper of this description, it would be impossible, and even injudicious, to be led from the general outline into any notice of the innumerable minor currents of which seamen have frequently made mention, and which may often be looked upon as eddies and counter-currents, produced by the main body of the stream,† and being occasioned by a variety of changing circumstances, may not again be found in the same exact position.

As it is necessary in this circuitous course to start from some particular point, which may be considered as it were a commencement of the circle, we may adopt as the most proper the western line of the continent of America, whereby the circle is more nearly broken, from pole to pole, than by any other of the dry lands of the earth. Setting out then from this point, and viewing more especially the equatorial line of currents, we enter the immense expanse of the North and South Pacific, where every account that has touched upon the currents tends to establish the fact of their westerly course; and as the force of these currents must there be more steady and equal than on any other part of the globe, from their being unopposed by any thing more important than clusters of small islands, we should not expect them to assume that dangerous and impetuous power by which they are frequently distinguished in the Chinese sea, and in the Atlantic. Mr. Mariner, and other navigators, have given us some interesting proofs of the existence of westerly currents, in the adventures of parties of natives, passing from one island to another, being carried to a distance of many hundred miles, and being found on islands from whence they were utterly hopeless of ever being able to regain their native shores. Of this portion of the globe, however, it must be admitted that we as yet know but little with regard to the currents. But if we find in the Indian Ocean, and in the Atlantic, a series of well established facts in support of the system now under consideration, we have a full right to extend it, by analogy, to the less visited parts of the globe, especially when corroborated by the few but striking facts just alluded to. Proceeding then in a westerly course, and having reached the western bounds of the Pacific, with the Chinese islands and shores on the one hand, and the continent of New-Holland on the other, we hear of a succession

of powerful currents from the eastward, forcing their devious courses through the crowded archipelago, and pointing towards the east coasts of Africa. Here the currents on both sides of the equator, being confined in a much smaller space than in the Pacific, and being forced by the form of the land out of that position which is naturally given them by the rotatory motion of the earth, become more violent, and consequently more obvious. In their efforts to retain their position north of the equator, they act with great force against the shores of the seas of Bengal and of Arabia, occasioning in the former the well known and formidable surt of Madras. Finding no vent in a northerly direction, the united stream is forced to the southward, along the east coast of Africa, and if left at liberty, it would follow the southerly impetus thus given to it, and flow into the southern ocean. In this, however, it is opposed by the south polar currents, and it therefore no sooner arrives at the Cape of Good Hope than it doubles that point, in the well-known Lagullas stream, and, running in a north-westerly direction, hastens to regain its natural position on each side of the equator. The force of this current off the Cape is so great, that nothing but a prevalence of westerly winds at some seasons could enable outward-bound ships to make head against it; and even with these favorable winds, ships are constantly found driven to the westward in the very face of the wind.

In following out the course of the equatorial stream across the Atlantic, we find it in part crossing the equator obliquely, and this great moving mass of waters, striking upon the eastern point of Brazil, is divided into two streams, one driven to the southward by the form of the coast of South America, until it is forced round Cape Horn, as it had before doubled the Cape of Good Hope, and joins in with the waters of the Pacific; the other, taking a north-westerly course towards the Caribbean sea and the Gulf of Mexico, passing with considerable force amongst the islands of the West Indies. Having reached the Gulf of Mexico, which opens its extended arms, as it were, to receive it, the current is there brought to a full stop, being precluded from advancing to the westward, or northward, by the form of the lands, and the waters being in consequence accumulated into a higher level than perhaps in any other known position of the whole globe. This elevation has often been supposed, and has even been shown to be demonstrably certain, without, however, any good reason having even been assigned for the phenomenon. We here, therefore, find a natural, and even necessary cause, upon the same principle as has been already explained by fig. 3 of the plate. The high level of the sea in the Gulf of Mexico cannot, however, pass a certain boundary, and the swell of waters at length finds relief by the only possible, though tortuous course, that is left open for its issue. The stream then rushes with a violence proportioned to its late confinement, round the south point of East Florida, and here, taking the name of the Gulf Stream, it proceeds to the northward, along the coasts of the United States to Newfoundland, where it encounters the Great Bank, and becomes again divided, one portion continuing towards the north and east by Iceland and the coast of Greenland, until again stopped by the north polar currents; and the other, bending to the east and south, is terminated in an

immense vortex in the centre of the north Atlantic, where it accumulates on the surface prodigious quantities of the *fucus natans*, or Gulf-weed, which is known to flourish in the warm waters of the Gulf, and to be carried by the stream into the Atlantic, and there covers the surface for hundreds of miles, together with floating timber and other bodies; washed out by the rivers of America. In this great eddy, then, the famous Gulf Stream may be said to terminate; but not so the other portion of the current which had passed on towards the north: when met by the north polar currents from the arctic seas, it is headed back towards the south, along the coast of Norway, and into the North Sea. We here feel its effects upon our own coasts, especially of the north of Scotland, and of Ireland, where floating substances from southern latitudes are frequently found. A minor branch passes through our channel, and rejoins the greater stream across the Bay of Biscay; and the whole at length becomes blended once more in the equatorial current off Cape Verde and the coast of Africa.

In an interesting work which has recently appeared—the Narrative of Capt. Owen's Voyages for the Survey of the Coasts of Africa—we have a distinct proof of the great obscurity which still overshadows the subject of the currents. In the observations on the results which have been gained by this long, interesting, and most fatal expedition, we find the greater part of the subject connected with the currents summed up in the following passages at the end of the work.

“As in the foregoing narrative but few observations have been introduced respecting the currents, and as it is a subject of much speculation and interest, at least to those connected with navigation, the following remarks from Capt. Owen's Journal may be considered worthy of publicity.

“It is a well known fact, as regards the African seas, that there is a perennial current which sets into the Atlantic Ocean, round the entire southern extreme of that continent; this current varies in its velocity in different situations, and at different periods, from five miles to one mile an hour. Some writers have supposed that, with reference to the Great Ocean, the Atlantic may be considered as a kind of mediterranean sea, the evaporation from which, together with winter frosts to the northward, must be supplied from the Southern Ocean, in like manner as the Mediterranean is fed from the Atlantic; and this hypothesis is borne out by the strong perennial currents about the shores of Cape Horn, and through the islands in its vicinity. But it is remarkable that these currents never appear to extend more than twenty leagues beyond the common deep-sea soundings, while their velocity is much decreased when near the shore; from which it may be understood that the depth is much diminished, and the stream broken by projections of bank and sand.

“Ships are frequently carried to the westward, quite round the Cape of Good Hope, even against the strongest north-west gales, by this current.”

Capt. Owen then proceeds to state the dangerous nature of the short though high waves produced by the currents and wind being in opposition, and the most effectual course by which the danger may be avoided. It is quite clear that every thing here

† Major Rennell's work on the currents is accompanied by a laborious and valuable volume of charts, which, if any objection could be made to them, might be considered so minute as to produce confusion. It appears that the courses of the minor eddies have been laid down wherever any naval authority could be produced for their existence, although it is more than probable that a large proportion of them may not again be found in the same position by future navigators.

stated is strictly in accordance with the theory here advanced. He bears witness to the *constancy* of the current from east to west; and in other parts of his work, when treating of the east coasts of Africa, and those of Madagascar, he mentions the rapid nature of the currents *passing down from the northward towards the Cape*, by which, in one instance, the *Leven*, in making the point of Mombas, was driven so far to the southward, that it took her *six days* to regain what she had lost by the *failure* of the wind for about *three hours*.—[Vol. II. p. 150.]

It is known also that, off the Cape, ships have been driven to the westward, at the rate of sixty or seventy miles per day, *even against* a strong westerly wind.

The only part of Capt. Owen's statement which in any degree stands opposed to what is now advanced, is the allusion to the constant currents at Cape Horn. These are not *stated* to run to the eastward, or *into*, instead of *out of* the Atlantic, but that fact is implied by the theory of *evaporation* from the Atlantic, which is counter-balanced by *entering* currents at both capes.* This is opposed by the general reports of the navigation of Cape Horn; it is opposed also, most distinctly, by the much better attested facts of currents *out of* the South Atlantic towards the north. For if evaporation took place on so great a scale as to produce *entering* currents at the two great capes, we must admit that an *entering* current should also flow from the colder latitudes of the north, which is not the case. As to the fact of the current at the Cape being little felt *close in shore*, and gradually diminishing in force as it extends to the open ocean, a hundred miles or more from land, it is in every way consistent with the whole theory of inland rivers. In the case of a projecting bank or rock in a river, the actual point of contact is exposed to great violence, but every other point of the stream exhibits the phenomena described by Capt. Owen off the Cape. Under the most projecting rock or point, comparatively smooth water is generally found close to the side; while the main body of the stream drives past with a distinct and rippling outline, diminishing in force, however, as it spreads out into the expanding pool below.*

We have thus passed in review the great and leading course of this wonderful and most admirable system by which the waters of the ocean are kept in that continued movement so necessary to their purity, and by which, also, it is highly probable that many important ends are effected, in regard to the amelioration of the climates of various parts of the earth. The land and sea breezes of the hotter climates are now well known, and also their causes. We may na-

* Major Rennell gives many interesting instances of bottles and other bodies carried by the currents. In one case a bottle was thrown overboard from the *Osprey*, of Glasgow, on the 17th of January, 1822, in 6° 13' south latitude, and 15° 35' west longitude, and it was found on the 27th of July of the same year, in Mayard Bay, in the island of Trinidad.

In another case, still more remarkable, a bottle was thrown from the American ship *Lady Montague*, on the 15th of October, 1820, two leagues north-east of the island of Ascension, and was picked up on the west coast of *Guernsey*, the 6th of August, 1821, and notice of it sent to the Admiralty. It is certain that this bottle must have passed, in ten months, over the whole course of the Gulf Stream, and from thence be carried (probably by the coasts of Iceland) into the North sea, and through the English Channel. We cannot, however, decide from this, or almost any instance of floating bodies, as to the *rapidity* of the current, for we cannot tell how long it may have been detained at various points, nor how long it may have remained on the spot where it was eventually discovered.

turally suppose this wholesome interchange to be powerfully affected by streams of current from the cooler latitudes; and we also may be assured that the heated waters of the Gulf Stream must carry along with them into the Frozen Ocean a degree of warmth which cannot but materially affect the rigidity of those latitudes. Even in our own country, we are well aware, from continued experience, of the mild effects of a westerly wind. We have no particular warmth to look for from the *lands* to the westward of us; on the contrary, the winters of Labrador and of Canada are well known to be unusually severe. But when we find that a vast reservoir of heated water, and consequently of *warm vapors*, exists in the Atlantic, we can no longer find a difficulty in naturally accounting for the mild and humid effects of our westerly winds, which, even in winter, produce on Ireland and the west coast of Britain the verdant growth of a milder season.

It is scarcely necessary, in conclusion, again to revert to the theory of the winds being the prime movers of the currents; for besides the arguments already adduced, by which we trust it has been shown that ocean currents could not but exist, even if there were no winds whatever, we have only to examine the numerous instances mentioned even by Major Rennell, of ships being drifted far to *windward*, in the very teeth, not of transient breezes alone, but of settled and heavy gales. "One ship," says he, "was carried 10° of longitude (*equal to 570 miles*) to the westward, between Cape Verde and the Cape of Good Hope, and yet had been subjected to the south-east trade wind. Another was driven 220 miles, between the Canaries and the coast of Brazil. Another in the equatorial current, in June and July, was set 297 miles to the westward, in *five following days*, between 3° north and 4½° south, and yet had entered the south-east trade wind." Such, and numerous other instances, well known to all seamen, are sufficient to show that the currents must be set in motion by some much more powerful and less *superficial* cause than the mere *friction* of the winds, however fixed or severe. That the winds agitate the *surface* of the waters no one will attempt to question; but that this agitation can extend to the vast depths at which the law of fluids above explained must operate, we have not the slightest reason to suppose. Major Rennell brings forward, in proof of his theory, the well known fact, that the surface of a canal, or of a lake, is always higher at the *leeward* than at the *windward* side. This fact is at once admitted, but it is one of very small effect, and merely *superficial*, being occasioned by *waves*, and instantly subsiding with these waves. But in order to prove the point, it must be shown, that in a straight canal of several miles in length, with a strong breeze right on end, the force of the winds, near the middle of the distance, (where they must have acquired their full force,) can affect an object of no great weight at the *bottom of the canal, and at a depth of four or five feet*. If this effect takes place in canals, or in large inland lakes, such as those of North America, and also at considerable depths, the theory might be supposed to derive some support from it. But this is not the case; and in inland lakes, of whatever extent, although the surface may be raised on the leeward side, in violent winds, objects deposited at a few

feet of depth lie perfectly secure and unmoved.

The winds would not, therefore, effect the end for which the great circulation of the waters of the ocean is obviously intended; and any theory of the currents, which is mainly founded on so false a ground, however ably it may be treated, cannot but mislead the mind, and in many instances prove injurious, not only in a scientific, but also in a practical point of view.

NEW-YORK AMERICAN.

APRIL 12—18, 1834.

LITERARY NOTICES.

For the first time since we commenced our *Saturday Reviews*, we ask indulgence at the hands of our readers for being unprepared with one. But in very truth we have been too much engaged, heart, mind, and body, during the past week, in what we deem the sacred cause of Liberty and the Constitution, to have had either leisure or inclination for any mere literary labor. The traveller in the far West, too, whose letters add a relish usually to the Saturday paper, fails us—or rather, probably, Mr. Post Master Barry's mail carriers fail us—this week; and we throw ourselves, therefore, on the indulgence of our readers.

SUMMARY.

The Norfolk Herald of onday, is in mourning for the death of Judge *Robert E. Taylor*, one of the most eminent citizens of Virginia.

It is our painful duty (says the National Intelligencer of yesterday,) to announce the decease of the Honorable LITTLETON P. DENNIS, a highly respected and most estimable Representative in Congress, from the State of Maryland. He expired yesterday afternoon, at his lodgings in this city, after an illness of six or seven days.

Charles R. Leslie sailed Wednesday in the Philadelphia for London. The Professorship of Drawing at West Point did not answer his expectations, and duty to his family compelled him to return to Europe.

Last evening, by invitation, Mr. Leslie met a number of brother artists and literary gentlemen, at an entertainment at the rooms of the Academy of Design, who testified to him their admiration of his genius, and their regret that he was not longer to remain among us.

With the exception of Col. Trumbull and Mr. Dunlap, one prevented by illness, the other by the somewhat increasing infirmities of age, all the painters, engravers, and sculptors of the city and vicinity were present, together with *Messrs. Washington Irving, G. C. Verplanck, James Hillhouse, F. G. Hallock*, and other literary gentlemen.

It was a parting tribute—well deserved on the one hand and rendered with taste and feeling on the other.

The following letter from Commodore Ridgely, sets forth the liberal contributions made at the Navy Yard, Brooklyn, in aid of the Poles—the money is in the hands of Mr. George W. Lee, Treasurer of the Naval Lyceum, to be paid over to such Committee as may be raised to assist these exiles.

NAVAL LYCEUM, UNITED STATES NAVY YARD.

New York, April 15, 1834.

I am requested by several of the members of the United States Naval Lyceum, employed and residing at this station, to transmit the within amount of money, \$146.50, to you as a Committee, to be used as you, in your better judgment may think proper, for the benefit of the unfortunate but gallant Poles, who have been lately brought to this country in the frigates of Austria.

I take great pleasure in saying that part of the contribution was made up by the Joiners employed in the yard, and the Seamen and Mariners *aboard*, who voluntarily gave them twenty-five cents each, and

who would have contributed more, had I permitted them. I am Gentlemen, very respectfully,
Your obedient Servant,
CHAS. G. RIDGELY.

It gives us great pleasure to learn that the CONVENTION for the settlement of our claims on Spain, which the President announced at the opening of the present session as in progress, was signed at Madrid on the 17th of February, and may be shortly expected at Washington. We hasten to communicate this information, which to the claimants, is so important, and to the country at large so gratifying, as it furnishes another proof of the success of the just and enlightened policy pursued by our venerable Chief Magistrate.—[Globe.]

IMPORTANT RESOLUTIONS.—The following resolutions have been submitted for the consideration of the House of Representatives of the United States: By Mr. VANCE, of Ohio.

"Be it further enacted, That from and after the passage of this Act, instead of the compensation now allowed by law, there shall be paid to the within named officers the following sums per annum:

"To each of the Secretaries of State, Treasury, War, and Navy, four thousand dollars. To the Postmaster General, three thousand five hundred dollars. To each Assistant Postmaster General, eighteen hundred dollars. To each of the Comptrollers of the Treasury, two thousand dollars. To each of the Auditors of the Treasury, two thousand dollars. To the Solicitor of the Treasury, two thousand dollars. To the Register of the Treasury, two thousand dollars. To the Treasurer, two thousand dollars. To the Commissioner of Indian Affairs, two thousand dollars. To the Commissioner of the General Land Office, two thousand dollars.

"And that there be deducted from the compensation now allowed by law to the Clerks in the Departments of State, Treasury, War, and Navy, including those in the General Land Office, at the rate of thirty-three and one third per centum per annum.

"That from all officers of the customs, by whatever name designated, or in whatever manner employed, there shall be deducted from the compensation now allowed to them by law, at the rate of thirty-three and one-third per centum per annum.

"That from all officers connected with the system of the public lands, either as Surveyors General, Registers, Receivers, or Clerks, there shall be deducted from the compensation now allowed to them by law, at the rate of thirty-three and one-third per centum per annum.

"That from all the Clerks in the General Post Office, Deputy Postmasters, their Assistants and Clerks, there shall be deducted from the compensation now allowed to them by law, at the rate of thirty-three and one-third per centum per annum.

"That from all persons connected with the Indian Department as Superintendents, Agents, Sub-Agents, Interpreters, Agents for removals, Commissioners, or in whatever other manner employed, there shall be deducted from the compensation now allowed them by law or regulation, at the rate of thirty-three and one-third per centum per annum.

"That to the members of the Senate and House of Representatives, instead of the compensation now allowed by law, they shall receive six dollars per day and six dollars for every twenty miles travel to and from the Seat of Government. And that from and after the expiration of the present Presidential term, the salary of the President of the United States shall be fifteen thousand dollars per annum."

The BANK OF WASHINGTON, at Washington, has stopped payment.

The notice of the stoppage of payment by the Bank of Washington, another of the inevitable consequences of "the experiment" which is carrying disaster and devastation over the whole face of the country, was as unexpected to us as it will be to our readers. In the perfect integrity of the administration of that Institution, entire confidence is reposed; and the step which it has taken is doubtless the result of irresistible necessity.—[National Intel.]

ANOTHER AND ANOTHER.—The Patriotic bank of Washington—which it was supposed might, by the aid of the Pet Bank there, escape the fate which three of the banks of the District have undergone—has found that aid not forthcoming, and has accordingly been obliged to suspend specie payment. A public notice from the President and Directors of the Bank avers its solvency notwithstanding.

We regret to hear of the alarming illness of Ho-

RATIO GAFFS Esq., of Montreal, a merchant of high character and great personal worth, and well known by his extensive business relations in the States, as well as in the Canadas. His death (which was hourly expected at the date of our information) will be a severe deprivation not only to his amiable family, but to the city, to the prosperity of which, his enterprise has greatly contributed, and particularly to the numerous visitors from the United States, to whom his courtesies and civilities have been so liberally extended.—[Albany Argus.]

COURT FOR THE CORRECTION OF ERRORS—Tuesday, April 15.

The Chancellor moved that the extra term of the Court be held on the 23d day of August next, at the Capitol in the city of Albany. On motion of Mr. Maisson, the question as to the time and place was divided; and after some conversation between several members of the Court, the time, (23d August) was agreed to. Mr. Kemble then moved a resolution that the term be held at the City Hall, in the city of New York. Mr. Westcott moved to lay the question on the table—Lost. The motion to hold the term at the Capitol in the city of Albany was lost—ayes 13, noes 17, as follows:

Ayes—The President, Chancellor, Justice Savage, and Messrs. Conklin, Edmonds, Edwards, Fisk, Hasbrouck, Hubbard, Macdonald, Stower, Tracy, Van Schaick—13.

Noes—Messrs. Armstrong, Bishop, Cary, Foster, Griffin, Halsey, Kemble, Lansing, Livingston, McDowell, Mack, Maisson, Quackenboss, Seger, Seward, Sudam, Westcott—17.

The motion that it be held at the City Hall in the city of New York was then agreed to. Adjourned to Friday, the 25th inst.

From the Boston Mercantile Journal.

ACCIDENT ON THE RAILROAD.—We learn that a serious accident occurred yesterday afternoon, on the Boston and Worcester Railroad. As the locomotive was returning from Newtown, with a train of passenger cars, when near the Four Corners, H. H. Fuller, Esq. and lady, of this city, attempted to cross the track with a horse and chaise, in advance of the locomotive. Mr. Fuller, it appears, was not aware of the proximity of the Engine, and unfortunately crossed the track at the moment the Engine approached, without perceiving it. The consequence may be anticipated. The locomotive struck the wheel of the chaise, shattered and overturned it. Mr. and Mrs. Fuller are considerably injured, but we are happy to learn not dangerously.

RICHMOND, APRIL 2.—The driver of the Northern mail cart yesterday morning before day, drove over a steep bank, a few miles this side of Hanover Court House, and falling under the horses' feet, it is believed, was trampled to death by them. He was apparently dead when left by the stage. In consequence of this melancholy occurrence, the Northern mail was delayed two or three hours to its arrival in this city yesterday morning.—[Whig.]

[From the Daily Advertiser.]

LATEST FROM SPAIN—Via BORDEAUX.—By the Brig Rome, Capt. Davi, arrived last night, from Bordeaux, having sailed on the 16th March—the Editors of the New York Daily Advertiser have received files of papers to the 11th, containing Madrid dates to the 6th March, and Bayonne to the 9th.

The Capital of Spain continued perfectly tranquil. No change in the ministry had taken place, nor was any talked of. The Northern Provinces were in a very rebellious state. The Carlist party was far from being subdued.—We have only time to make the following translations:

A correspondent writes from Bayonne the 8th March, by a courier extraordinary, which left Madrid the 5th March, we learn that on its departure the capital was perfectly tranquil. The Queen had left for Arangnes. No change in the ministry had taken place, nor was the subject even mentioned.—A movement had taken place, by a party of the Carlists who had been put down, and some 8 or 10 had been killed, and several arrested.

Another courier which left on the 6th, represented that Madrid was perfectly tranquil.

The success of the Queen's troops, at Onati, in capturing 120 persons, 590 guns, and a squadron of mules with munitions of war, belonging to the Carlist party, is confirmed.

Col. Lorenzo had captured a large body of insurgents at Aspetia.

It was reported that the Courier from Paris had been assassinated by the insurgents, near Bedous.

Tolosa and Villafraanca are constantly occupied by the troops of Il Pastor.

Murder of Captain Skirling.—Intelligence has been received of the murder of Captain Skirling, who was engaged under the direction of the Board of Hydrography, in surveying the west coast of Africa. On the 23d of December, 1833, he left his ship early to commence the survey of Cape Roxo, in a boat, accompanied by four men and a boy. On the boat landing, the natives, apparently attracted by the glitter of their instruments, attacked them, shot the cockswain, and then speared the captain. They were so intent upon plunder, that they allowed the rest of the crew to escape. They hid themselves in a bush, and after some time made their way down to the coast, and fortunately signaled the boat of the tender to the Etna. Captain Skirling served under Captain Hewett, in the Fury, in the survey of the North Seas. He then sailed in Captain P. P. King's expedition round Cape Horn, and succeeded Captain Stokes in the command of the Beagle. He was a most charitable and good man, and had left a wife and two children to deplore his early death.

Ignorance v. Knowledge.—Knowledge has the wantonness of a child and the cruelty of an ogre.—He builds up systems in one age, only to overturn them in another; he begets theories in one century, and not only exposes them to perish, but is himself the unnatural instrument of their destruction in the next. He resembles Homer's infant on the seashore, raising castles of sand with pains and perseverance, then with hands and feet demolishing its labors; or he may be likened still better to Titan, devouring, as fast as they see the light, the offspring of his own loins. Now turn we to Ignorance, and what do we behold? Not content with evincing the tenderness of a parent, by defending, like a lion, his own notions and opinions whenever they are attacked, he rushes forward with disinterested courage to the succor of systems and theories with the procreation of which he had nothing in the world to do, the moment he sees them deserted by their natural protectors, and in danger of being annihilated by the ruffian Improvement, or that shocking desperado, Reform. This promptitude to espouse the weak is extremely amiable in Ignorance. Let him but see a principle in any science, astronomy, geology, anatomy, metaphysics, or politics, no matter how philosophical its pedigree, in danger of being roughly handled by what is called the march of intelligence, or the extension of experience; in other words, hustled by a knot of ill-looking facts, like a foot-passenger in Oxford street by a gang of pickpockets, Ignorance at once cries, "To the rescue!"—makes common cause with the doctrine in distress—kneels down one fact with a flat contradiction—floods another with a shout—puts a third "hors de combat" with a horse-laugh, and by this chivalrous conduct not unfrequently extricates his friend, and gives some useful error or venerable prejudice a new lease of its existence. But in the catalogue of the vices of Knowledge, although there be many blacker, there is none so contemptible as his curiosity.—Ignorance, it must be allowed by his best friends, is in some few particulars rather more inquisitive than becomes his dignity; he is sometimes too anxious to discover what his next door neighbor is to have for dinner; or how many thousand pounds the old lady on the other side of the street has got in the Three per Cents; or what business the gentleman, who lives six houses higher up, has with the fat man in a green coat and pink cravat, who knocks at his door every day, except Wednesdays, at five minutes past two precisely; but what of this?—it is only in downright trifles that any body can justly tax Ignorance with curiosity—when was he ever known to meddle with the great secrets of the world?—When, for instance, was he ever caught, like the elder Pliny, peeping into the crater of a volcano? Never; he leaves such low tricks to those Paul Frys, yeelped philosophers. He would have remained in the dark for ever as to the laws of electricity, before he would have stooped to the mean artifice of Dr. Franklin, who, on pretence of flying a kite, insinuated himself into the confidence of a thunder-cloud, made himself acquainted with all its private affairs, and then (to crown his baseness) published them to the whole world. Nature never leaves her wardrobe, or a drawer of one of her scrutiores unlocked, but these dirty fellows, your men of science, take advantage of the oversight to tumble her dresses, read her family papers, and often purloin her trinkets for their cabinets and museums. What are mineralogists but a gang of thieves, who have discovered the secret springs of the chest, in which Nature keeps her treasures? What are phrenologists but pick-locks, who actually boast of having in their possession a key to the whole mystery of the human mind? The mathematician

you may swear is about nothing handsome—he is generally to be found in angles and corners. The astronomer waylays nature by night; the botanist, in wild and sequestered places—

"In wood or grove, by mossy fountain side,
In valley, or green meadow;"

wherever, in fact, she is likeliest to be found asleep, or undressed. Who, then, can doubt the purity of the intentions with which he pursues his cryptogamias and syngenesias? No question, Apollo's pursuit of Daphne was nothing in the world but a botanical excursion:—the divinity only wanted to ascertain the nymph's class and order. Then what have the conchologists and entomologists to say for themselves? The elders in the apocryphal legend, Heaven knows, were filthy old fellows enough; but their obscenity was chastity, compared to the conduct of these men of periwinkles and butterflies; they did not put on their spectacles—at least it is not so written—to contemplate the bathing beauty; they were content to stare at Susannah's charms with the naked eye. Not so the entomologists; not even spectacles are enough for them; they must actually have microscopes, or they think they see nothing.—[Metropolitan Magazine.]

The Poetical Works of the Rev. George Crabbe; with his Letters and Journals, and his Life, by his Son. London: John Murray.

We select the following instance of delicate, liberal, and sincere patronage of destitute genius, unequalled, perhaps, in any age, but, we fear, vainly to be looked for in this. But the great Edmund Burke possessed a fine mind, a feeling heart, and a genius which sympathized with genius wherever found.—The Poet of "The Village" and "Annals of the Parish," sought for fame and fortune in London—the *El dorado* of youthful hope. His hopes sustained repeated and cruel disappointments; poverty progressed upon him, until he was driven to the verge of extreme destitution, though it weakened not his piety nor subdued his dependence upon a protecting Providence: that Providence asserted itself and rewarded him through a suitable agent. When the prospects which he attached to the judgment, liberality, or self-interest of the book-selling tribe, were extinguished, and that he knew not where to find the next day's bread, for manna dropt from heaven in his days no more than in ours, he bethought him as his last resource to write to Edmund Burke, and enclosed him a specimen of his poetry. Hope deferred was not suffered to sicken our author's heart—he received an immediate answer from the great champion of rational liberty and Gospel truth, inviting him to an interview. Mr. Crabbe's son shall tell the rest:

"Mr. Burke was, at this period, (1781) engaged in the hottest turmoils of Parliamentary opposition, and his own pecuniary circumstances were by no means affluent; yet he gave instant attention to this letter, and the verses which it enclosed. He immediately appointed an hour for my father to call upon him at his house in London; and the short interview that ensued entirely, and for ever, changed the nature of his worldly fortunes. He was, in the common phrase, 'a made man,' from that hour. He went into Mr. Burke's room, a poor young adventurer, spurned by the opulent, and rejected by the publishers, his last shilling gone, and all but his last hope with it; he came out virtually secure of almost all the good fortune that, by successive steps, afterwards fell to his lot—his genius acknowledged by one whose verdict could not be questioned—his character and manners appreciated and approved by a noble and capacious heart, whose benevolence knew no limits but its power—that of a giant in intellect, who was, in feeling, an unsophisticated child—a bright example of the close affinity between superlative talents and the warmth of the generous affections."

If our space permitted, we should like to pursue further this period of the poet's life and fortunes—suffice it to say that Mr. Burke took him into his house, placed him at his table, gave him the advantages of his books, and conferred all these favors with a delicacy that never suffered his guest to experience a feeling more painful than gratitude. Although Crabbe had not been regularly educated, Mr. Burke got him ordained by Dr. Young, then Bishop of Norwich, and, by introducing him to other patrons, did not suffer the course of his fortunes to stop until the poor poetical adventurer became the incumbent of two livings, and was enabled to pass the rest of his life in happiness and "learned ease."

Both Houses of Congress adjourned on Tuesday, in token of respect to the memory of the deceased member from Maryland, Mr. Dennis, whose funeral was to take place next day.

Appointments made by the Governor, with the advice and consent of the Senate, April 11.

New York.—John T. Morris, culler of staves and heading.

April 16.—*New York.*—Michael Ushoeffer, Associate Judge of the Court of Common Pleas.

YOUNG MEN PROSCRIBED!—The House of Assembly this day REJECTED the bill incorporating the YOUNG MEN'S ASSOCIATION FOR MUTUAL IMPROVEMENT. This vandal blow will astound our citizens! There is not on record another such act of Legislative proscription and intolerance.

This Association is conferring immense benefits upon the youth of our city. It has grown, under the fostering care of our citizens, into vigor and maturity. It has ample means to perpetuate its usefulness, and only wanted, what has been granted to all other Literary Associations, an act of Incorporation. But this small boon is denied! The Legislature refuses its protection to some fifteen hundred of our Young Men who are associated for Mutual Instruction!

The above paragraph is from the Albany Journal.

SPAIN.—It will be recollected that in the previous amnesty of the Spanish Government, the language was deemed so unexceptionable that many of the exiled members of the Cortes refused to avail themselves of it. We now publish the last, made under the new Minister, which is conclusive, without any qualification or reservation, and such as will be deemed unexceptionable.

OFFICIAL.—Spanish Amnesty.—Decree.

"Considering the reasons which you have laid before me, and complying with the opinion of my Council of Ministers, I have thought proper, in the name of my beloved daughter Donna Isabel Segunda, to extend the Royal Decree of Amnesty to all the ex-Deputies of the Cortes, who may be out of the kingdom in consequence of opinions expressed by them as such Deputies, granting them permission to return freely to the bosom of their country.

"Take notice hereof, and do all that may be necessary for its fulfilment."

Signed in rubric, and addressed to Don Francisco Martinez de la Rosa

Madrid, February 7, 1834.

DEATH OF MR. GATES.—The Montreal Herald, of Saturday last, thus announces this event.

We stop the press to announce an event that occurred last night, and which will be received by the community in general with the deepest sorrow—the death of the Hon. HORATIO GATES, than whom a more honest, upright, just and independent man, never distinguished the annals of mercantile or political history.

Lightning.—The severity of the lightning which accompanied the heavy fall of rain on Wednesday evening was very great. The main-topmast of the U. S. ship John Adams, lying at the wharf at the Navy Yard, at Gosport, was struck; the electric fluid descended the top and main mast to the keelson, splitting and shivering the mast, and then ascending passed out of one of the gangway ports, setting fire to the ship, which was extinguished with but slight damage, owing to the prompt arrival of the engines. The shock of the heavy explosion at 6 o'clock, so much resembling the report of a heavily charged cavalry pistol, was also severely felt in several parts of our towns—a female servant in a family on Town Point, was knocked down and so much stunned that she did not recover for a considerable time. We learn that a small house in a lane near the Steam Mill was struck with the lightning, and a woman and a child, in one of the rooms, for a time rendered insensible.—[Norfolk paper, April 11.]

NEW ORLEANS, SATURDAY, MARCH 29.—Cotton.—The increased difficulty in negotiating Bills on Europe and the North, has suspended operations for the last few days; the reduction in the rate of Exchange has its corresponding effect on prices; and the market, at this moment, and during several days, has been dull, in consequence. We continue to quote at former rates, because no sale at a reduction will authorize a change; but we repeat the remarks of Brokers, who say that the rates last quoted would be very difficult to obtain; indeed, some go so far as to say that they are nominal. The principal operations, prior to the stagnation, are, viz: 700 bales, at 12 1.8; 80 at 11 5.8; 17 at 11 1.4; 68 at 12 1.2; 88 at 14; 31 at 13 1.2; 580 at 13; 28 at 11 1.4; 261 at 11; 134 at 11; 20 at 12; 11 at 13 1.2; 200 at 13 1.2; 150 at 14; 21 at 13; 40 at 12 1.2; 100 at 13; 57 at 12; 65 at 14 1.2; and 35 at 11 3.8—all of Louisiana Mississippi; of Alabama and Tennessee, the following, viz:—168 at 10 3.8; 50

at 13; 90 at 10 1.4; 450 at 10 3.4; 220 at 10 1.2; and 600 bales, rate unknown; choice Cotton has brought a fraction over our highest quotations; and, notwithstanding every thing, this description maintains its price.

Sugar continues to be in the usual good demand—we do not alter our quotations; prices are not steady, but vary from 1.2 to 1 cent, according to the want of the seller or the credit of the purchaser.

Molasses.—The season for this article will soon be at a close—the former good demand still continues without any change in price.

Tobacco.—There is an increased demand for this article.

Flour.—There is a falling off in price since our last publication.

Whiskey.—We have again to remark an exceedingly depressed market.

Coffee remains without any change.

Hides.—The market may be considered rather dull.

Freights.—The rates quoted last week remain without material alteration; we do not, however, as then, say brisk.

CHARLESTON MARKET, April 12.

Home Productions.

COTTON.—Sea Island 25 a 35; Stained 10 a 16.

Maline 22 a 25.

Santee 50 a 24.

Short staple, 10 a 13.

Rice—Inferior to good 9 a 24; prime 24 a 28.

Flour—Philadelphia, Baltimore, and Richmond, 65 a 54.

Corn—56 a 70; Oats 38 a 43; Peas 65 a 70.

Tar—Wilmington \$13; Georgetown, none.

Pitch—\$17. Rosin, \$14 a 15.

Bacon—64 a 74 cents. Hams 9 a 10.

Lard—8 a 9 cents. Soap—Yellow 6 a 7.

Oil—Sperm 90 a 10 cents per gallon.

Lead—In bars, 64 a 65 cts per lb.

REMARKS.

COTTON.—There has been a good demand for all descriptions of this article this week, until yesterday, when in consequence of the inclement state of the weather there was nothing done.—Since the receipt of favorable accounts from Europe, an advance of 1 cent on Uplands has been demanded and in some instances obtained, one very prime lot was disposed of at 134.—The sales down to yesterday morning have been 6151 bales Uplands, as follows:—135, at 134, 107, 184; 517, 13; 963, 13; 18, 12; 443, 12; 695, 12; 106, 12; 631, 12; 188, 17; 343, 11; 193, 11; 633, 11; 24, 11; 509, 11; 213, 11; 50, 10; 493, 10; 52, 10; 103, 10; 15, 10; 77, 10; 30, 10; and 13 at 9 cents.

RICE.—Remains the same as at the close of the last week, and the demand for any quality except strictly prime, very limited.

Flour.—Still remains dull.

GRAIN.—One cargo of about 3,000 bushels good White Corn, brought 70 cts.

MOLASSES.—100 bbls. N. Orleans Molasses brought 31 cents cash.

The China Trade now that the monopoly of the East India Company is done away, is becoming an object of great inquiry and general interest in England. Sir J. Brabazon Urmston, late President of the English factory at Canton, has published, or rather privately circulated, a pamphlet on the subject in London, of which we find the following notice in the London Times.

The extract recommends, it will be seen, the selection of a new trading station in preference to Canton.

Sir J. Brabazon Urmston, notwithstanding the idea which he entertains with others of the impracticable character of the Chinese Government, has directed his pamphlet chiefly to show that Canton is a bad port for carrying on the tea trade; that the British trade ought to be removed to a more convenient station; and that a more convenient station would be found in the island of Chusan, of which he gives the following description:—

"The island of Chusan is situated in latitude 30 deg. 26 min. north, and longitude 121 deg. 41 min. east. It is about nine leagues, or 27 miles, in length, from N. E. to S. W., and about five leagues, or 15 miles, in breadth, from N. W. to S. E. Chusan lies off the provinces of Chekiang, to which it appertains, and is about 10 or 12 miles to the northward of Kit-tow Point, which is the extremity of a long and mountainous promontory of Chekiang province; and the nearest approach of Chusan to the continent of China is at this place. Chusan is the largest and principal of the considerable group generally called the Chusan islands or Archipelago, and is nearly opposite to the river leading to the port and city of Ning-po; and not far from the bay of Hangcheou, which bay terminates in a river called the Tchen-tang-chiang, or otherwise the Cien-tang-keang, leading to the large and important city of Hangcheou, the capital of the province of Chekiang. These cities will be noticed hereafter. The chief town (or city, as it is called) of Chusan, is Ting-hai, which stands about a mile from the harbor, and close to the water's side, at the harbor,

is a village with several houses. It is at this latter place, where we had formerly our factory, as already mentioned. The city of Ting-hai is said to contain 4,000 or 5,000 inhabitants, but I have not been able to ascertain, from any authorities, what the entire population of the island of Chusan is. Ting-hai city is surrounded by a wall, with bastions, and is defended like the generality of Chinese towns—that is, with a few miserable guns."

At this island we had formerly a factory, which was broken up by the jealousy of the Chinese in 1703. It has abundance of excellent water; a harbor completely land locked, protected against all winds, and one of the safest in the world; and being at a very inconsiderable distance from the continent of China, is in the immediate neighborhood of the most flourishing, opulent, and commercial provinces of the empire. It is to this part of the Chinese dominions to which our exports are chiefly sent, though landed at Canton. The opposite coast has several large cities, navigable rivers, and an enterprising and wealthy population.

There can be no doubt that on a comparison of the geographical situation of Chusan with that of Canton, the preference would be given to the former as a British commercial station; but what assurance have we that our author's project would be adopted at the Court of Peking? Would it not require several mere embassies to the Emperor, more successful than any which we have yet sent, to obtain such a change? Would not the whole Hong at Canton, with the Governor and the tax-gatherers, be in an uproar at the very proposition of deserting their port? Our author does not disguise the difficulties of the undertaking, but expresses his sanguine belief, that if we were resolute to make the change, it might be ultimately accomplished.

Sir Richard Church, K. C. H.—Few men have exemplified the instability of fortune or the mutability of human affairs more than this gallant officer.—During the war he embodied and commanded the Greek light infantry corps, with which he materially assisted in the capture of the Ionian Islands, particularly Santa Maura, where he highly distinguished himself. Soon after the general peace he entered the service of his late Majesty the King of Naples and Sicily; here he rose to the highest point of favor with the Sovereign, and honors and rank were liberally bestowed upon him. Nominated to the command of the Calabrias and the Abruzzi, with extraordinary powers, he cleared those provinces of the numerous hordes of brigands and robbers which had long infested them; and his name is yet held in terror by their descendants. In 1820-21 the attempted revolution in Sicily commenced, and Church firmly adhered to the King, amidst many vicissitudes; at length the spirit of intrigue prevailed to so great a degree in the Royal councils, that Church was thrown into prison, from which he refused to emerge unless allowed to exonerate himself before a court martial, upon which he was honorably acquitted. Party ran, however, too high for his stay in Naples, and Church accepted the command, and was appointed Generalissimo of the Greek forces; for some time matters ran on with tolerable success; at last fortune was on the wane, and Church was defeated with great loss in his attempt upon Athens; but continuing to retain the command, he contrived to render important services to the cause in Western Greece, by confining and repelling the incursions of the Turks under Redschid Pacha. Capo d'Istria, jealous of his popularity, thwarted and baffled all his projects, and Church, at length disgusted, resigned the command, and for several years lived in exile at Ægina, neglected and forgotten. On the accession of King Otho the star of his fortune once more reigned in the ascendant, and Sir Richard Church is now Ambassador Extraordinary from Greece to the Court of St. Petersburg.—[*Naval and Military Gazette.*]

From the *London New Monthly Magazine* for March.
THE PARVENU COUNTERS.

"To hold the mirror up to FASHION."

"How is her Ladyship?" asked a little, thin, old woman, bent double with age, and clothed in rusty mourning. "How is her Ladyship?" repeated the poor old creature with a hurried earnestness, and an emphasis so strong, that, like the knock on the Earl of Anketell's hall door which had preceded the question, it seemed impossible that the sound could have been caused by the emaciated and diminutive figure that stood at the portal.

"How is her Ladyship;—well I like that," replied a tall, corpulent servant, whose red swelling cheeks and thick purple lips gave an expression to his mockery somewhat between burly contempt and rage,

at being so seriously disturbed for nothing, and by nobody.

"How is her Ladyship; well, what impudence the common people have come to!"

"My good fellow, I entreat you to answer me," said the old woman, her fine, sharp, and prominent old features, and large grey eyes casting forth an expression of imploring earnestness.

"My good fellow;" well, if I stand this from such as you, I'm ———, muttered this surly porter, slamming the door in the poor creature's face.

The knock was repeated with redoubled energy, and the porter re-opened the door with a visible resolution to get rid of the intruder.

"Give your Lady this," said the old woman, thrusting towards him a sealed letter: "give her this, and I assure you, she will be overjoyed to see me."

"My lady never suffers us to take in begging letters."

"This is not a begging letter; and here is a half-crown for your trouble."

"Well, what impudence you beggars have come to! You are a genteeler beggar than I should have thought by your looks; but, my good woman, it is more than my place is worth to receive petitions from beggars."

"Stand aside! open the door! be quick! Here's my Lord and the Duke of ——— coming down stairs!" said a lad in livery, whose countenance spoke a gentle nature,—that is, a nature not so long in office and authority as that of the surly porter of Lord Anketell's hall.

True it was that the stripling Duke of ———, who had just come into his immense estates after the narings of a long minority, had terminated a pretty long interview with Lord Anketell, and his Lordship was accompanying his Grace from the drawing-room down stairs to the hall, and the servants had not been made aware of his approach. Some confusion and bustle took place; but the folding doors were widely thrown open, six or seven servants, in their splendid liveries, hastily drew up in a double line, bowing profoundly to the peers as they passed between, and holding their breaths whilst his Lordship gave the Duke a shake of the hand,—cordial and sincere in full proportion to his rank and unequalled affluence. It was in this scene of hurry and confusion that the little old woman in black had contrived to slip past the servants through the door without being perceived.

She had flitted, with a witch-like rapidity suited to her strange figure, through the outer hall, had passed the vestibule and the great staircase, and had actually got into the inner hall, and at the foot of the back stairs, without being perceived. Here she met a maid-servant descending with a small silver tray of sandwiches and liqueur glasses, and she immediately began to intreat her to take the letter to her Lady, offering the solitary half crown as an inducement. The maid coolly put the half crown in her pocket, and reading contemptuously the superscription of the letter, threw it into the tray, observing, as she passed, that it should be given to her Lady some time in the day, but she knew it would never be opened, for letters "of that look" never were. It was at the moment when the old woman was sinking upon a bench, overcome with affliction, that the servants of the hall discovered her. They had missed her immediately the Duke had got into his cab; and, after staring in every direction, to their astonishment they beheld her sitting, as they thought, at her ease in the inner hall.

"You impudent old wretch! how dare you get there?" cried the enraged porter, waddling to her, and seizing her by the shoulder to thrust her into the street. He had already pulled her to the foot of the grand staircase, when the woman thrust out her attenuated and withered arm, and grasped with her long thin fingers one of the volutes of a scagliola pedestal which supported a massive ormolu lamp.

"No power on earth shall force me hence! I will see Lady Anketell, or here will I die!" cried the old creature with a tone which almost terrified the servants. There was something dreadfully impressive in it, and it appeared almost supernatural when its energy and resolution were contrasted with the form from which it proceeded.

The porter seized her shrivelled, spider-leg like fingers, declaring, with an oath, that he would wrench them off, or crack her joints, if she did not let go her hold. He suited the word to the action, and evinced no symptoms that he had uttered an idle threat. His thick lips became purple with rage; but his victim firmly retained her hold, and bit her under lip that seemed more like parchment, whilst her eyes stared wildly at him, dilating as in the paroxysm of frenzy.

"For God's sake, Burton, don't break the poor old creature's wrist!—wait and she will give way," said the lad we have before mentioned; and he took hold of the sturdy arm of his fellow-servant to restrain his violence.

"Let go, or I will squeeze your very nails off," said the porter, and she uttered a faint screech, and her face became convulsed, though she seemed to grasp her object with undiminished firmness.

"Burton, she will pull down the pedestal and break the lamp; the noise will disturb his Lordship, and you know his temper when anything goes wrong.—Leave her alone, and I will get a policeman."

These arguments of the lad had more effect than his appeal to humanity. The porter let go his grasp, the lad was sent for a police officer; and the footmen stood in a group; discussing whether it would be better merely to have the woman turned out, or taken before a magistrate.

In a few minutes the boy returned with a police officer. All eyes were immediately turned to the place of recent struggle, and every voice simultaneously cried out, "By—— she is off; she has escaped!"

Where can she have got to?—how could she get away?—it is impossible! and a score of similar ejaculations, seemed to convey the idea that the servants really began to think they had been contending with a witch that had vanished into air.

"Go to!" said the policeman; "why down stairs, to be sure, and she has robbed the house; and escaped, probably, up the area steps."

This idea was adopted by all; each accused the other of stupidity, in not having at first thought of a thing so palpable; and at last all turned with fury on the lad for having prevented the violent ejection of the woman in the first instance. The poor boy stood in speechless terror, overwhelmed with the idea of having been the cause of a robbery in his Lordship's house. At length the policeman assumed the direction of affairs, and having placed a servant at the front and another at the back area, to prevent escape, he descended with a third, in order to search the offices and basement story of the mansion.

The supreme wisdom of all the parties was here entirely at fault. The fact was, that whilst the porter had stood with the outer door ajar waiting for the return of the foot-boy with an officer, and whilst the rest of the servants had got round him to settle the difficult point of simple ejection, or of ejection followed by custody in the station house, and correction by a magistrate, the old woman had almost flown up the grand staircase, and had entered a magnificent ante-room, where she stood gasping for breath, and her senses perfectly bewildered at the dreadful scene she had gone through.

It was with difficulty that she collected her scattered thoughts; but at last she grew sensible of the magnificence around her, and she began to reflect that the splendour seemed to realize, or surpass, all she had read in fairy tales about oriental grandeur and magic treasures. She paced fearfully through the scene, her mind too saddened by one sole object to be attracted by wealth, except through a vision of its power over the affections of nature. She found a door partly opened, and holding her breath, and stopping like a mortal upon the precinct of hallowed ground, she entered a bed-room, so superb as to make the preceding chamber appear almost poor. A painted ceiling, mirrors extending from that ceiling to the ground, buhl cabinets, and tables of enamel and gold, covered with china vases, bouquets, bijouterie, and jewelry of dazzling lustre, might have confused the brain of any person whose mind was sufficiently at ease to be moved by splendor. There was a large bed, with its golden canopy, and royal purple curtains lined with rose satin, and on it was a human figure, but so buried in pillows of down, and shaded by lace, that it was impossible to tell whether it was the person of a child or of an adult. At the side of the bed were two tables of enamel and gold and of buhl, the one covered with new novels, and with poems and books of prints, superbly bound, and the other hid by a profusion of trinkets, rouge pots, scent bottles, perfume caskets, mirrors set in gold, and ornaments beyond an ordinary capacity to name. A golden cauldle cup, on a gold salver, stood in the middle, and its untouched contents showed that the patient had not been disturbed to cloy the surfeited appetite with refreshments. The once decent, but now rusty and somewhat tattered mourning of the old woman, with her humble widow's weeds, formed a singular contrast to the surrounding splendor, as she stood, with a palpitating heart, by the bed-side, gazing on it with a fearful restlessness, as if she dreaded to be seen by the object it supported, whilst at other moments she gazed upon the sleeping figure,

with an affection which seemed too intense to be endured. At last the figure moved, the lady awoke, and raised her beautiful face from the pillows, like a pearl from cotton.

'Oh God! Mary, child!' cried the old woman, as she staggered towards the bed, and made an effort to throw herself upon it, endeavoring to clasp her daughter in her arms, but the bed was by far too high, and the lady put out one of the most delicate and pretty hands ever seen, and shaking her lace ruffle, she beckoned to her mother not to come too near.

'My dear mother,' said she, 'for goodness' sake don't come so near; you don't know the mischief you might do. I have a fever on me, and your clothes are really wet. Why, you have not come through the rain?'

The old woman buried her face in the bed clothes, and sobbed piteously. At length recovering herself, she said, with a hurried tenderness—

'Oh, Mary, tell your poor, old mother, is there any danger?'

'Not exactly danger; but if my Lord were to know that you had been here, it might occasion an unpleasantness between us.'

'But, Mary, child, are you not in danger?'

'Danger, mother, how can I be in danger! am I not legally married, and have my rights; but when a man of Lord Ankettell's rank and estate marries a workhouse apothecary's daughter like me, it is only grateful in me not to mortify him by my family, and in his own house too, and before his servants I trust in goodness you did not announce yourself as my mother?'

A large tear, or rather a continued tear, ran down the pale and withered cheek of the mother. With a tone altered almost to chilling apathy, she cried, 'Mary, I read in the newspaper that you were dangerously ill. You had never written to me since your marriage, and I was content not to mortify you; but when I found your life in danger—I who had nursed you through the cruel diseases of your infancy—I who had—oh God! oh God!—it was too much to let my child go out of the world without kissing her poor face—once, all my own. I have walked to London from — to hear one word of tenderness from my own child; and I find her life not gone; but nature is extinct, and you are the child of pride—not my child.'

'Lord Ankettell's wife, you meant to have said, mother. But I really was ill. I caught a cold at Almack's; but as his Lordship wanted an excuse for not attending the House whilst the — bill is in committee, he got the newspapers to publish that I was dangerously ill. Ha! ha! ha! Pray, mother, reach me that handkerchief, and the eau de Cologne. Your tears, I do declare, have taken all the curls out of my hair, and my wrist, too, is wet through and through. Lord, ma, only see the lace—'

'And you are not ill, Mary,' said the old woman; 'not really ill; and she pressed the fair little hand to her haggard lips—hung over the face of her daughter, regardless of that which alone occupied that daughter's thoughts—the curls and the lace.'

'But, ma, how shabby, how very shabby, and dirty, too, I declare—la, I would not have had my Lord's servants see you for the universe. You will never leave off those odious, unbecoming weeds—and father dead so long. Well, I'm glad to find you still living; and I hope you have been happy, and well—and—'

'Very happy, very well,' said the old woman, wringing her hands and sobbing bitterly.

'La, I thought I heard footsteps; didn't you?—do stop, you make such a noise—no, it is a mistake. Well, ma, I heard of your design about the tombstone in our churchyard and the monument. I was so alarmed—but I knew you hadn't exactly the means to incur such an expense—and so I was comforted, and—'

'Mary, Mary; that monument is already erected to your poor father's memory, and it expresses—'

'Gracious goodness! not that he was the village apothecary, I hope?'

'Yes, that he was for fifty years the doctor of that petty workhouse—the shopkeeper of our petty village—and that he was beloved by the poor, and respected by the rich.'

'Oh, how very unfortunate; for my Lord naturally wishes to avoid all tracing of my parentage, and Burke's Peerage merely says that Lord Ankettell married Mary, daughter of —, Esq., of —, in the county of —, and that reads very well.'

'Oh, Mary, your brain is turned, and it breaks my poor old heart! My last illness cost me all the remains of my little property; even your poor old father's silver watch was sold, and now I—'

'Well, ma, that must have been your own fault, for

never was there a better mother; and had you written one word—but give me that pocket book off the table—no, not the red with the gold clasp, but the purple with the ruby.'

The old woman mechanically handed the pocket book, and the fair lady raised herself on her downy pillows, and began to count its contents, and to decant on the operation, as she turned over leaf after leaf.

'No, that 1264. is for Mr. Taylor's bill, my shoemaker; he has not been paid anything for four years, and must be paid; and this—let me see—what did I put these notes in this leaf for? oh, I remember, 937. for the plumassier; and this 551. is for the perfumer's account; and 371. for the brushes and trifles of that description; but oh, this odious Madame de Tressor, my milliner and dressmaker—6191. in one year, and less than a half—well, my lord's check is not enough—he must settle this bill himself, for I'll have nothing to do with it. But here, my dear ma, I have no occasion to settle Mr. Payne's bill for the brushes and knick-knacks, and so, suppose you take this 371. And the young and beautiful countess stretched out her hand, holding the folded notes slightly-pressed between her thumb and finger towards the old woman, who stood aghast with astonishment.

'Ha! ha! ha! Well, ma, you make me laugh; you may well be astonished when you see such sums, and recollect how the shillings used to be saved, and the broken bottles sold from father's shop, to buy me my winter's cloak and clogs—but take the money.'

The old woman shook her head, and thrust the proffered notes from her.

'Why, ma, I should not offer them to you if they weren't mine. To be sure, when a rich man, or a man of title, marries a poor girl, he doesn't marry the whole family; and indeed it is not exactly honest for a woman to give away her husband's property to poor relations; but his lordship gave me this money for myself, and has no right to know what I have done with it; and if I appear in good style as his wife, and don't get into debt beyond his allowance, what right has he to complain; besides, if a rich old man marries a fine young woman, I don't see that the obligation is all on one side; and besides your are my mother.'

The mother groaned bitterly.

'It is not like helping cousins, nephews, nieces, and a swarm of toad eating, insincere, heartless kindred, so, ma—but, good gracious! the room is haunted, or I did hear footsteps, and a sigh, too. Pray, ring the bell—no, not for the world—the servants would see you—but ma, look all round the room for me. You know how nervous I was when a child. Well, you won't stir? Good heavens! take the money and say good bye, and let me ring the bell, for I begin to be very much frightened. Here, dear mother, take the money, for your clothes are very thin for this bitter weather, and you must want it—indeed you must.'

During all this time, the poor old woman had stood upright and rigid; like a figure of extreme old age suddenly petrified. Her large gray eyes were dilated, and though they glanced upon her daughter they bespoke perfect vacancy, or at least an unconsciousness of the volubility with which she had been assailed. As the daughter again pressed her to take the money, she took the notes in her hand and crumpled them without the slightest alteration of attitude or change of countenance. Lady Ankettell became alarmed, and thought the mother was what she called 'death struck.' 'For God's sake, take the money and go!' she exclaimed with earnestness. The old woman's lips were a little convulsed; she recovered her senses, and suddenly catching a glance at the ball of crumpled notes that she had been pressing in her palm with the grasp of convulsion, she dropped them on the floor, shaking her head, and clasping her hands, she left the room without uttering a word. She appeared like a corpse moving by mechanical contrivance. Lady Ankettell followed her with her eyes till she had got out of the door; and then, taking an oval hand-mirror from her toilette, she began to adjust her curls, lest her waiting woman might see them in their disordered state.

As the mother descended the grand staircase, she was met by Lady Ankettell's waiting woman followed by a footman with a tray and cold fowl and tongue, and decanters of wine. 'I am ordered, Madam,' said the maid, courtesying with the most profound respect, 'to give my Lord's most respectful compliments to you, and to say that his Lordship entreats that you will not leave the house without taking refreshments. His Lordship begs you will remain as long as is convenient, and, above all things, he hopes that you will order the carriage when you feel disposed to return home.' The old woman was startled at these sounds of respect and kindness: they

touched her heart. Unable to speak, she shook her head in token of dissent. She had been recalled to sensation and consciousness: her efforts to conceal her emotion were fruitless: her lips were strongly convulsed, and, putting her hands to her face to hide her feelings, she burst into tears, and hurried out of the house through the line of servants, who bowed to her most respectfully as she passed through the hall. The humility of the servants was a contrast to their previous brutal violence, which could not be surpassed, except by the contrast between the manners of the daughter of the Countess of —, and as plain Mary —, the apothecary's daughter of —, the belle of the village for whom so many shop-lads had once received and given many broken heads and bloody noses.

In fact, the sound of footsteps and the sigh which Lady Ankettell had heard, or fancied she had heard, in the bed room, were not the sounds of a super, nor altogether of an unsaturnal being. His Lordship, in passing the ante-chamber, had been attracted by the deep sobs of his mother-in-law. He had entered the bed-room, and, concealed by the curtain, he had witnessed the whole scene between the daughter and the mother. His feelings were moved to the extent of offering the poor old creature refreshment and the ride home; they were moved to this extent, and no further.

Two pounds thirteen shillings and four pence half-penny was the sum precisely which the poor old widow had in her pocket, as she tottered down the steps from the portico of her daughter's mansion at Whitehall. She hurried to the — inn, at White-chapel, and that night took her outside place in the mail to —. It was a wet and bitterly cold night, preceding, by eight-and-forty hours, that night on which all hearts are made glad, all stomachs are filled to the verge of extravagance and wantonness; it was the night of the twenty-third of December, when the decrepit old widow seated herself outside the — mail, immediately behind the coachman. The wind drove the sharp sleet so fiercely that no ingenuity of the loom could withstand its searchings, and but for the cold at the heart, the old widow might have been sensible that her daughter was not wrong in describing her dress as old, threadbare, and shabby—shabby—in such a night. The little curved hunchback was drenched to the skin, and looked like a whisk of frozen straw—a bunch of white bristles. The coachman, moved to pity, procured her an ostler's coat where he changed horses, and without the hope of the perquisite. Arrived at the village of —, the widow was lifted into her cottage. The bright warming pan was put in requisition, and less than twelve hours had witnessed the transition of the old creature from sobbing on the quilt of Lady Ankettell, in her splendid room, to gasping under the brown and red rug in her stone paved chamber. In four hours she was a corpse.

THE TOWNSMAN.—BY LEIGH HUNT.

More Boots; and no more Smith!

Boots being a subject of inexhaustible interest to the contemplative mind (whether the mind be of such an order as deeply observes the boots of other men, or of such as sits in the shape of a well-dressed body, more deeply considering its own; or lastly whether it be of that class, which uniting experience with reflection, comes to the question with an impartiality humanized by self-love,) we have willingly acceded to a request made to us for the utterance of some further thoughts on a matter so obviously connected with the 'march of intellect.'

Nor is it to be objected, that we are travelling out of the path of our Townsman, in devoting a whole paper to this very urbane subject; for besides its right to the application of that epithet in its ordinary sense, as implying a polished elegance, it is well known to all the lovers of shoe-leather, that there is no boot like your 'town-made boot;' and therefore no town-made article connected with the subject, whether boot or essay, can be anything but what is extremely proper and metropolitan.

Much could we say on the lustre of boots from all antiquity, especially during the heroic ages of Greece, when to say that a man was 'well-booted,' was to say that he was well-armed at all points, and irresistible. Homer's fondness for this epithet is so remarkable, that boots perhaps may be considered as the things he admired most, next to good cheer.—'Boot and saddle' of *mutton* may be conjectured to have been his military cry—his interpretation of the sound of the trumpet. But we cannot enter at any length into the epical or historical parts of our subject. We must be content with catching a few of the most illustrious lights of it, as they strike upon un the legs of ages; such as the Seven-league

boots of Giganticide, the boots of Napoleon, and on Frederick the Second, those of the cat that waited on the Lord Marquis of Carrabba whose descendant has become so famous in the songs of Béranger,) and the boots of my lord the Bishop, who was made to dance in them by that merry Radical, Robin Hood; a dance still performed in private, they say, by some of his lordship's successors, in a delirium of anticipation.

We know but a single ill thing of boots in the whole circle of their history, and that is, the ingratitude with which one of them suffered Sir John Suckling to die of him, after having been the most brilliant and accomplished friend they had had in the annals of high life. Sir John, as every one knows, was one of the tip-top wits of the Court of Charles the First; and no man had ever done greater justice to the exterior manifestation of what a wit has in him, by the grace and spirit of his attire, from top to toe. His feather must have been among the airiest, and his boots among the most solid yet animated, that ever announced the quality of the wearer. We say nothing of his failure in a campaign—doubtless the work of envious fortune. A servant, envying the fortune that he still had in the shape of money, robbed him and ran away: Sir John, in his indignation, though the most generous of men, called for his boots in order to pursue the scoundrel, when on thrusting his foot down, his heel encountered a nail, or knife, or some such horror, (we forget what,) which the rascal is supposed to have stuck into the boot on purpose, and the result to the gallant poet was mortal. "Where were ye, nymphs, (who preside ever boot-making,) when ye could allow such a catastrophe to take place? Nay, where were ye, who preside over dancing, and riding, and all 'poetries of motion,' that ye did not put a voice into the boot, and make it cry out against the approach of the ill-fated leg?" The tragedy was long ago, but the sweet wit is alive in his writings, and we cannot but feel for his wound to this day. That couplet alone in his *Ballad on the Wedding*—

Her feet beneath her petticoat,
Like little mice, stole in and out.

ought to have brought down Venus to save him. But Venus can sooner get people into scrapes than out of them. Perchance the boot, being, of course, exquisite of its kind and too small, was even less easily got off than on; so that the plunge being once taken—But we shall be distressing too much the legs of the reader's sympathy.

We had our admiration very pleasantly excited the other day by the candour of a friend of ours—a wit and a patriot withal, and one that would part with his leg and boot together to do the State service—that he never had anything new sent home from the makers of his habiliments, but it made him rise that morning with the greater alacrity. It should be added, that he is both young and handsome enough to render an attention to these things natural and graceful. Yet what signifies hand-someness? If we are not handsome, we may have a handsome taste—an air—an address; and it is not a man's fault if nature has not given him a good leg. His nurses and progenitors must look to that. His soul may have a good leg—calf may be in his brain; why should he not help out his limbs accordingly, and, with the boot-maker's assistance, make his leg appear worthy of him? We remember the time ourselves, when a knock at our chamber-door, with "the tailor has brought the things, Sir," or the opening of our eyes upon a new pair of boots standing in the corner, and demanding (as the poets say) our legs inside of them, gave a new color to the morning. A youth buds forth into new clothes, as a tree with its blossoms. Nip not his bibe too coldly, nor breathe dulness upon the polish of his Warren's jet. He will outgrow his blossom, and produce fruit by-and-by. Charles Fox, one of the most natural of men, was at one time a buck about town, with red heels to his shoes. Petrarch reminds a friend, in one of his letters, of the time when they used to pace the streets of Avignon, conscious of their cloaks and stockings, and afraid of a spot of mud. But we grant that "the same is not the same." A youth may be a dandy, and nothing else, and remain one all his life. That is not desirable certainly; though seeing what he is, and that his thoughts cannot soar above his hat, perhaps we ought to be thankful that they can rise even so high, and that a regard for his very boots saves him from sheer grovelling in the mud. Mud is assuredly not what he likes. The countryman in the farce will not wear his boots in bad weather, for fear of spoiling them; and we have seen men in town, such as would have thought themselves preposterously treated by comparison with him, who nevertheless appeared quite as anxious to save the boots they had on from their ostensible uses,

and occasionally turned round to survey them, as nicely as if they stepped in again.

It must be owned, that boots, like other honors, are not to be worn without their drawbacks. The pulling on of a new pair, even when nothing dandified is intended, is often no joking matter; unless, indeed, a man has arrived at that time of life, or philosophy, or adversity, or *spindle-shankism*, when he has no more respect for his leg than for his walking-stick; or rather so much tenderness or pity for it, that he will consult its ease above all things. We confess this to be the ease with ourselves, to whichever of those four causes the reader may choose to attribute it; therefore, as we have not been without our experience the other way, we may own, that, like Mr. Pepys when he chuckled at seeing people go to be married, it is not without something of a peculiar feeling of entertainment that we think of any one's undergoing the "torture of the boots," when the maker has just brought them home, and his helping them to put them on. There they go at it, the patient straining and tugging with the boot-hooks, the maker humming and *puling* the fit, or non-fit, vowing that nothing can be better, and that a *lelle* more thrust at the instep will do the business. Occasionally they stop to take breath, or the bootmaker takes the hooks into his own hands, and then they go at it again; or they take the foot out and *recommence*! Horrible, yet refreshing moment! Big with the thoughts of the next tug! Then comes that detestable evidence of a struggle, the shoeing-horn; and the bootmaker, though he hails it as the terminator of all difficulties, knows very well that the instep will stick again, and that the gentleman will walk for the next ten days in a Valley of the Shadow of Gout, not because the boots have been made as directed, but because he has not the heart to send them home again.

And yet this shall be nothing, perhaps, the achievement of taking the boots off again at night! Wear them all day he must, for he has got them; and get them off at night he must, or how is he to go to bed? Meantime his feet have swollen; their prison seems, for the last three hours, to have been growing closer and closer; and get them off he cannot! Boot-jacks are tried; servants are tried; the boy, suddenly letting go, is kicked almost through the wall. What is to be done? Sometimes there is no help for it, short of cutting the boots off; and blissful must be the release even then, to any one but a miser, spite of the convulsive twitches and resentment of the ill-treated muscles. We know a philosopher, now lost to all sense of his boots, except when he has to buy new ones, who, one night, when a young man, in the joviality of his despair at not being able to get off a pair, laughed at the impossibility of sleeping in them, and fairly took them to bed with him. Horrible was his waking about four o'clock in the morning, with a sense in his legs as if they had been turned into mile stones.

We had something to say on boots mudded, and boots too large, and boots suddenly burning one's legs at the fire-side, &c. &c.; but adieu, boots. We must suddenly break off and leave you, else we shall have no room to bid another adieu, little expected by us when we wrote our last, and in fact, denounced as impossible. Let no man say what will happen next Sunday; for we are positively about to give up our use of the name of Smith? 'Tis true!—and all, after all, to please Smith himself;—nay, to please John Smith!—John Smith whom we should still designate the Smithest of all Smiths, and therefore the voidest of all right to a particular consideration, had he not convinced us we were in the wrong by one of the most agreeable and charitable of letters. This was the correspondent whom we alluded to in our last, and whom in consequence of our not having referred to his first letter to mend our recollections, we had mistaken for Tomkins. Tomkins (as we are now reminded) he spoke of in that letter, but it was out of an inclusiveness of sympathy, and because while feeling for the sensitiveness of the Smiths, he thought himself bound not to overlook minor claims; or as he overwhelmingly puts it because "your creed teaches me to consider others first." Now who can resist such a Smith as this? Has he not brought together and concentrated the whole common-place universality of the Smiths into one particular and shining light, and forced us to acknowledge in his person the thoughtfulness due to others, even in a jest? and let us add (without giving the good-natured suggestion an air of solemnity beyond what he intended), that it is a good symptom of the times, when sympathy is so widely and so extending, that the "vested interest," even of a jest is good humoredly questioned in its behalf. Well, we have owned our weakness in this matter (for we are not strong minded and anti-conventional enough to own, except in this whisper of

a parenthesis, that we consider it a strength), and shall frankly, and at once, give up all similar future use of the name of Smith. We do not care who taxes us for it. Being above poverty of spirit, we are above taxation. We shall "go on, Sir" (as the man said), "superior to a vicious sarcasm," "By excess of pride," saith Bacon, "the angels fell;" and by the excess of the desire of knowledge man fell; but in charity there is no excess, neither can Smith—we beg pardon, "*man* nor angel come in danger by it." This last slip of the tongue must be excused. Bad habits, like boots, are difficult to conquer.

Next week, we intend to make immense reparation to the name of Smith, and utterly to baffle the hopes of its scoffers, by touching upon the various memories, male and female, that have rendered it eminent.

GENEROSITY OF A ROBBER.—After the defeat at Hedgely Moor, the Lancastrians concentrated their forces on the plain of Hexham Levels and there waited the advance of the Yorkists, resolving to place on the issue of the expected contest their final overthrow or triumph. The result of this battle is well known: the army of Henry was completely routed, and even the high cap of state, with its two rich crowns, fell into the hands of the Duke of York, who shortly after ascended the throne of England by the title of Edward the Fourth. Henry fled from the field; and Margaret, his queen, with the young prince Edward, escaped into an adjoining forest. They had scarcely entered within its intricacies, when they were seized by a band of ruffians who had there located themselves. Regardless of her rank, sex, or situation, they stripped the queen of her jewels, and were proceeding to greater indignities, when a quarrel arose between them as to the distribution of the spoil.—Seizing this favorable opportunity for escape, the prince and his mother fled into the interior recesses of the forest. As the royal fugitives were pursuing their toilsome journey through this wilderness, a rustling of the trees forewarned them of approaching danger; but before they could reach concealment, a robber confronted them in their path. "Ruffian," exclaimed the queen, assuming the dignity and haughtiness of carriage familiar to her, "thou hast tarried over long; thy comrades have been before thee, and despoiled us of our treasures." "Truly," answered the robber, "their chief will find but worthless prey in what they left you. You may pass: 'twere better that you take the right hand path, its windings lead to an opening of the forest." "Stay man," said Margaret, "though a desperate outlaw, there yet may be some spark of pity in thee, some reverence for a kingly name." "Pity and reverence are terms alike unknown to me," replied the man, "and kingly power is but an idle sound to him who knows no sway—respects no laws;" "Yet will I trust thee," answered the Queen, "for fortune leaves us little choice of friends. Behold this boy—the son of Henry of Lancaster, your king." Whether surprise overpowered him, or a latent nobleness of mind forbade him to insult fallen majesty, the robber chief uncovered his head, and proffered his assistance to the wanderers. "What service said he, 'can I render to you and the prince your son?' "Provide us with a place of concealment," eagerly rejoined the queen, "and effect our escape beyond the reach of York." "Concealment," said the robber, "is not difficult; and what more I can do I will do: for the present follow me to a cave hard by, where you may repose in safety, and wait a favorable opportunity of rejoining your friends." He led the way through an unfrequented path, and brought them to "a wretched but secure asylum" in the forest, which, in memory of the unfortunate queen, still retains the name of the "Queen's Cave."—[Fisher's Picturesque Illustrations.]

Extract from Bulwer's "Pilgrims of the Rhine."

"I know not what the love of others may be," said Gertrude, "but ours seems different from all which I have read. Books tell us of jealousies and misconstructions, and the necessity of an absence, the sweetness of a quarrel; but we, dearest Albert, have had no experience of these passages in love. We have never misunderstood each other, we have no reconciliation to look back to. When was there ever occasion for me to ask forgiveness from you? Our love is made up of only one memory—unceasing kindness!—a harsh thought, a warring thought, never broke in upon the happiness we have felt and feel."

"Dearest Gertrude," said Trevelyan, "that character of our love is caught from you; you, the soft, the gentle, have been its pervading genius; and the well has been smooth and pure, for you were the spirit that lived within its depths."

List of Subscribers to the Railroad Journal who have paid in advance to Jan. 1, 1835, —continued from March 22, 1834.

James Dean, Burlington, Vt., (omitted in the first list)
 J. Edgar Thomson, Philadelphia, Pa. do.
 S. Van Rensselaer, Albany, N. Y.
 R. L. Keen, New-Orleans, La.
 T. J. McKeen, do.
 Ross Winans, Baltimore, Md.
 John Elgar, Philadelphia, Pa.
 C. Tower, Waterville, N. Y.
 D. Deshler, Tusculumbia, Ala.
 D. McKenzie, Petersburg, Va.
 Chas. Dyer, Jr., Providence, R. I.
 Jas. Camak, Athens, Ga.
 W. Dearing, do.
 W. Lumpkin, do.
 W. Williams, do.
 W. H. Swift
 Alexr. McGrew, Cincinnati, Ohio
 D. M. Curtis, Deep Creek, Va.
 Ami Clark, Meriden, Conn.
 C. Barnard, Jr., Hartford, Conn.
 E. L. Miller, Elizabethtown, N. J.
 Israel Wells, Vincenton, N. J.
 Jacob Tidd, West Roxbury, Mass.
 Howland, Ward & Spring, Charleston, S. C.
 Wm. Parker, Westborough, Mass.
 Solomon Holman, Huntington, Ind.
 C. Crozet, N. Orleans, La.
 D. Levy, St. Augustine, Fla.
 W. H. Talcott, Albany, N. Y.
 Holbrook Association of Teachers, Andover, Mass.
 J. D. Steele, Vansville, Md.

NOW READY,

AN INTERESTING AND USEFUL MAP.

Upon which is delineated nearly all the Railroads now chartered in the U. States. It is designed to show the present contemplated connexion of the different lines, as well as where others may hereafter be constructed to connect with them. It may be had either in sheets, price \$1 25, or put up in morocco for pocket maps, price \$1 50, or on rollers at \$2 25, in any quantity, by applying to the subscriber.
 D. K. MINOR, 35 Wall street.
 New-York, April 2, 1835.

TO CIVIL ENGINEERS.

The Western Railroad Company, incorporated by an act of the General Assembly of the State of Tennessee, for the purpose of constructing a Railroad from the town of Jackson, in the county of Madison, by the most practicable route to the Mississippi river, wish to employ one or more persons as engineers to survey the route and superintend the location and construction of said road. Gentlemen who wish employment in the above capacity, will forward to the undersigned on or before the 3d day of June next, the terms upon which they are willing to engage, also the most unquestionable testimonials of good character and scientific and practical skill in works of the above description. An election of an engineer will not take place before the 3d of June.
 By order of the Pres't & Directors.
 JOS. H. TALBOT, Cash'r & Sec.
 Jackson, March 18, 1834.

LOCOMOTIVE ENGINES.

THE AMERICAN STEAM CARRIAGE COMPANY, OF PHILADELPHIA, respectfully inform the public, and especially Railroad and Transportation Companies, that they have become sole proprietors of certain improvements in the construction of Locomotive Engines, and other railway carriages, secured to Col. Stephen H. Long, of the United States Engineers, by letters patent from the United States, and that they are prepared to execute any orders for the construction of Locomotive Engines, Tenders, &c. with which they may be favored, and pledge themselves to a punctual compliance with any engagements they may make in reference to this line of business.

They have already in their possession the requisite apparatus for the construction of three classes of engines, viz. engines weighing four, five, and six tons.

The engines made by them will be warranted to travel at the following rates of speed, viz. a six ton engine at a speed of 15 miles per hour; a five ton engine at a speed of 18 miles per hour; a four ton engine at a speed of 22 1/2 miles per hour. Their performance in other respects will be warranted to equal that of the best English engines of the same class, with respect not only to their efficiency in the conveyance of burdens, but to their durability, and the cheapness and facility of their repairs.

The engines will be adapted to the use of anthracite coal, pine wood, coke, or any other fuel hitherto used in locomotive engines.

The terms shall be quite as favorable, and even more moderate, than those on which engines of the same class can be procured from abroad.

All orders for engines, &c. and other communications in reference to the subject, will be addressed to the subscriber, in the city of Philadelphia, and shall receive prompt attention.

By order of the Company, WILLIAM NORRIS, Secretary.

December 24, 1833.

For further information on this subject see No. 40, page 776 of this Journal.

STEPHENSON,

Builder of a superior style of Passenger Cars for Railroads
 No. 264 Elizabeth street, near Bleeker street,
 New-York.

RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part of the New-York and Harlem Railroad, now in operation.
 J 25 15

RAILROAD CAR WHEELS, BOXES AND AND OTHER RAILROAD CASTINGS.

Also, AXLES furnished and fitted to wheels complete at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to. Also, CAR SPRINGS.

Also, Flange Tires turned complete.

J8 ROGERS, KETCHUM & GROSVENOR.

NOVELTY WORKS,

Near Dry Dock, New-York.

THOMAS B. STILLMAN, Manufacturer of Steam Engines, Boilers, Railroad and Mill Work, Lathes, Presses, and other Machinery. Also, Dr. Nott's Patent Tubular Boilers, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited.
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INSTRUMENTS.

SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

EWING & HEARTZ, at the sign of the Quadrant, No. 53 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude.

For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewing & Hertz.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such facts should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable. They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.
 JAMES F. STABLER,
 Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' Instruments of your Manufacture, particularly Spirit Levels, and Surveyors' Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These Instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

WILLIAM HOWARD, U. S. Civil Engineer.

To Messrs Ewing and Hertz.—As you have asked me to give my opinion of the merits of those Instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming acquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprise so well merits, I remain, yours, &c.

B. H. LATROBE,
 Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them, upon application, to any person desirous of perusing the same.
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TOWNSEND & DUFFEE, of Palmyra, Manufacturers of Railroad Rope, having removed their establishment to Hudson, under the name of Duffee, May & Co. offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J. B. Jervis, Eng. M. & H. R. Co., Albany; or James Archibald, Engineer Hudson and Delaware Canal and Railroad Company, Carbon dale, Luzerne county, Pennsylvania.
 Hudson, Columbia county, New-York,
 January 29, 1833.

NOTICE TO MANUFACTURERS.

SIMON FAIRMAN, of the village of Lansingburgh, in the county of Rensselaer, and state of New-York, has invented and put in operation a Machine for making Wrought Nails with square points. This machine will make about sixty 6d nails, and about forty 10d nails in a minute, and in the same proportion larger sizes, even to spikes for ships. The nail is hammered and comes from the machine completely heated to redness, that its capacity for being clenched is good and sure. One horse power is sufficient to drive one machine, and may easily be applied where such power for driving machinery is in operation. Said Fairman will make, vend and warrant machines as above, to any persons who may apply for them as soon as they may be made, and on the most reasonable terms. He also desires to sell one half of his patent right for the use of said machines throughout the United States. Any person desiring further information, or to purchase, will please to call at the machine shop of Mr. John Humphrey, in the village of Lansingburgh.—August 15, 1833.
 A29 if R M & F

RAILWAY IRON.

Ninety-five tons of 1 inch by 1/2 inch,		Flat Bars in lengths of 14 to 16 feet counter sunk holes, ends cut at an angle of 45 degrees with splicing plates, nails to suit.	
200	do. 1 1/2 do.	do.	
40	do. 1 1/2 do.	do.	
800	do. 2 do.	do.	
500	do. 2 1/2 do.	do.	
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250 do. of Edge Rails of 36 lbs. per yard, with the requisite chairs, keys and pins.

Wrought Iron Rims of 30, 33, and 36 inches diameter for Wheels of Railway Cars, and of 60 inches diameter for Locomotive wheels.

Axles of 2 1/2, 3, 3 1/2, 4, 4 1/2, and 5 inches diameter for Railway Cars and Locomotives of patent iron.

The above will be sold free of duty, to State Governments and Incorporated Governments, and the Drawback taken in part payment.
 A. & G. RALSTON,
 9 South Front street, Philadelphia.

Models and samples of all the different kinds of Rails, Chairs, Pins, Wedges, Spikes, and Splicing Plates, in use, both in this country and Great Britain, will be exhibited to those disposed to examine them.
 d71meowr

SURVEYORS' INSTRUMENTS.

Compasses of various sizes and of superior quality warranted.

Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by
 E. & G. W. BLUNT, 154 Water street,
 J31 6r corner of Maidenlane.

ENGINEERING AND SURVEYING INSTRUMENTS.

The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely new: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy; also, a Railroad Goniometer, with two Telescopes; and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.
 WM. J. YOUNG,
 Mathematical Instrument Maker, No. 9 Dock street, Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.
 Baltimore, 1832.

In reply to thy inquiries respecting the instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad. I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable.

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sight, leaves the engineer scarcely anything to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to later angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

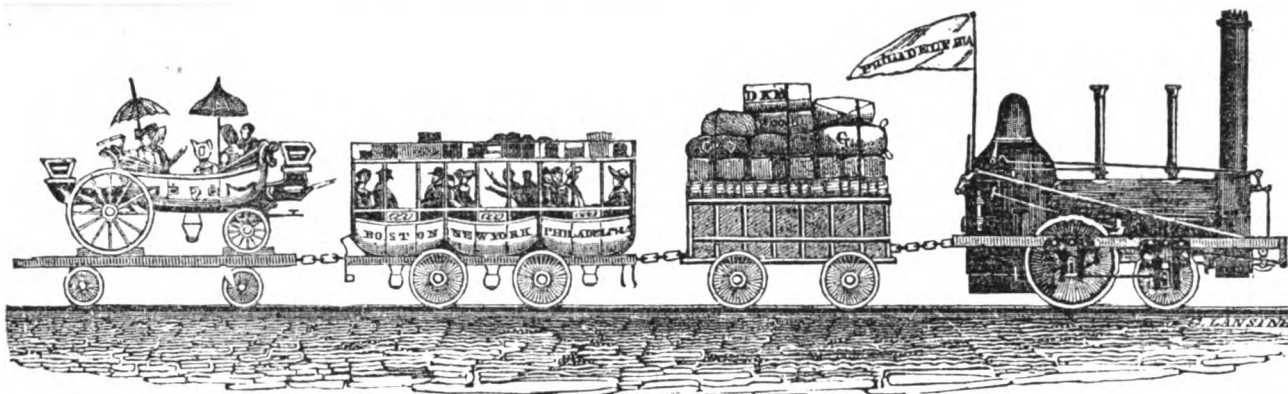
Respectfully thy friend,
 JAMES F. STABLER, Superintendent of Construction of Baltimore and Ohio Railroad.
 Philadelphia, February, 1833.

Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors.
 E. M. GILL, Civil Engineer.

Germantown, February, 1833.
 For a year past I have used Instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these Instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY R. CAMPBELL, Eng. Philad.,
 Germantown, and Norristown Railroad



AMERICAN RAILROAD JOURNAL, AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT No. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, Editor.]

SATURDAY, APRIL 26, 1834.

[VOLUME III.—No. 16.]

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, APRIL 26, 1834.

MR. BURDEN'S BOAT.—In answer to various inquiries respecting this boat, we may say, after taking pains to ascertain the fact, that she will take her place in the North River line on or before 1st June.

The banks of the upper level of the Chesapeake and Delaware Canal gave way last Saturday morning, and the water of the canal nearly all escaped. This accident will compel the trading vessels between Philadelphia and the ports on the waters emptying in, to the Chesapeake bay, to go round by sea as heretofore.

A good beginning.—Letters from Boston of the 17th instant, mention that the receipts on the 16th instant of the Boston and Worcester railroad, from passengers, were *one hundred and fifty dollars*.—The Locomotives now travel over the first ten miles of the road. It is expected that in a few days the whole of the first section will be completed and the travel extended to Needham.

Survey of the New-York and Erie Railroad Route. By J. S. To the Editor of the American Railroad Journal, and Advocate of Internal Improvements.

SIR,—I find in your Railroad Journal of Saturday last, the first object of notice contained therein is to the following effect:

"**SURVEY OF THE NEW-YORK AND ERIE RAILROAD ROUTE.**—A bill providing for this survey through the southern tier of counties, at the expense of the State, under a principal engineer to be appointed by the Governor, is now before the Legislature."

A railroad located as above described has long been a favorite object of my attention, and, as I apprehend, has, more than once, been a subject of observation in conversation with

you. I do conceive, if properly constructed, it bids fair to be ultimately the greatest thoroughfare in the United States, if not in the world. A slight knowledge of the country through which it must necessarily pass, the connection it will form between the waters of the ocean and the immense range of interior lakes, will give to it such a flood of business as must surpass any conception we at present can form an idea of.

I cannot, at the present moment, go into a minute description of the peculiarities of the formation of the ways now contemplated, but promise you to have it ready for insertion in your next number. It will possess the merit of entire singularity, if no other. But what will more particularly recommend it for adoption on this extensive route, is, that it is capable of being carried into complete effect at one quarter the expense of railroads on the construction of those now in use. Your obt. servt.

J. S.

Hoboken, April 23d, 1834.

The Liverpool and Manchester Railway. [From the London Mechanics' Magazine.]

We have been favored with a copy of the report made by the Directors of this Company, and find in it so much matter of fact that is of universal interest, on the subject of railways and locomotive power, that we need offer no apology for transferring it (with but little abridgment) to our pages. Mr. Grahame, and the other partisans of canal navigation, who still persist, with so much honesty and candor, in representing that the profits of this railway arise mainly from the conveyance of passengers, and that it cannot possibly compete with canals in the conveyance of goods, will observe in this report some rather stubborn facts on both these heads. The common-road steam-carriage charlatans too, who tell us that the expense of working a steam-carriage on a granite highway will be not more than *sixpence per mile*, and the tear and wear *next to nothing* (for "1,700 miles" at least), may learn from the circumstantial details here given of the actual expense of working such carriages on a railway, where the friction is many times less than on the best granite road than can be constructed, how much occasion they have to blush for the delusive representations they have sent forth to the public. We do not of course include in this class of public deceivers any of those honest and intelligent individuals—the Heatons, Hancocks, and Saxulas, of the day—who frankly subscribing to the undeniable fact, that there is more friction to be overcome on a common road than on a railway, have proposed to themselves to determine by experiment whether it would not be cheaper to work steam

carriages against that greater friction, than to be at the expense of laying down railways to avoid it—in some cases at least, if not in all. These last are adventurers of a very different stamp; they speculate on a particular result, which, though as yet unascertained, is neither impossible nor improbable; and as long as they pursue the reasonable object they have in view by honorable means, they shall command as they deserve our best encouragement and support.

LIVERPOOL AND MANCHESTER RAILWAY—FOURTH HALF-YEARLY MEETING.

LIVERPOOL, January 23, 1833.

Report.—The Directors, in submitting to the Proprietors a statement of their accounts and proceedings for the half-year ending 31st December, 1833, have to report a considerable increase in the general business of the concern, as compared with the corresponding six months of the previous year.

The total quantity of merchandise conveyed in the six months between Liverpool and Manchester was.....	69,806 tons.
To and from different parts of the line, including Warrington and Wigan.....	9,733
Between Liverpool and Manchester and Bolton.....	18,708
Total quantity conveyed.....	98,247
Quantity of coal from various parts to Liverpool.....	32,304
Do to Manchester.....	7,830
Total to Liverpool and Manchester....	40,134
The number of passengers booked at the Company's offices.....	215,071
The number of trips of 30 miles performed by the locomotive engines with passengers was.....	3,253
With merchandise.....	2,587
Total.....	5,840

Compared with the corresponding six months of the last year, the increase in merchandise conveyed has been..... 11,405 tons. In passengers 32,248.

The present winter has been in an extraordinary degree stormy and wet, which has no doubt diminished the amount of travelling.

The wetness of the season also has prevented the railway from being maintained in that complete order which is desirable; while the boisterous weather, with the dirty state of the rails, has impeded the passage of the trains, not unfrequently rendering assistant engines necessary to ensure their progress, even on the level parts of the way. These circumstances have unavoidably increased the charge for locomotive power. On the other hand, the navigation of the river, owing to the long continuance of tempestuous weather, being frequently dangerous, and sometimes impracticable, the utility and importance of the railway convey-

ance have become more manifest and striking, and the natural consequence has been an accession of traffic to the Company proportioned to the required accommodation afforded to the public.

The following is a statement of the receipts and expenditures for the half-year; and the subjoined table exhibits a detailed classification of the disbursements.

Half-year ending 31st December, 1833.

RECEIPTS.

Coaching department.....	£54,685	6	11
Merchandise do.	39,957	16	8
Coal do.	2,591	6	6

£97,234 10 1

EXPENSES.

Advertising Account	£6	10	0
Bad debt do.	374	10	1
Coach disbursement do., viz., guards and porters' wages, 1,168 <i>l.</i> 4 <i>s.</i> 6 <i>d.</i> ; parcel carts, horsekeep and drivers' wages, 361 <i>l.</i> 1 <i>s.</i> 7 <i>d.</i> ; materials for repairs, 689 <i>l.</i> 12 <i>s.</i> 6 <i>d.</i> ; men's wages repairing, 1,041 <i>l.</i> 1 <i>s.</i> 3 <i>d.</i> ; gas, oil, tallow, cordage, &c., 196 <i>l.</i> 4 <i>s.</i> 11 <i>d.</i> ; duty on passengers, 3,224 <i>l.</i> 11 <i>s.</i> 11 <i>d.</i> ; stationary and petty expenses, 277 <i>l.</i> 4 <i>s.</i> 5 <i>d.</i> ; taxes on offices, stations, &c., 116 <i>l.</i> 0 <i>s.</i> 8 <i>d.</i> ; guards' clothes, 64 <i>l.</i> 15 <i>s.</i>	7,138	16	9
Carrying disbursement account, viz., agents and clerks' salaries, 1,728 <i>l.</i> 16 <i>s.</i> 9 <i>d.</i> ; porters and brakemen's wages, horsekeep, &c. 5,006 <i>l.</i> 6 <i>s.</i> 10 <i>d.</i> ; gas, oil, tallow, cordage, &c., 529 <i>l.</i> 17 <i>s.</i> ; repairs to jiggers, trucks, stations, &c. 366 <i>l.</i> 9 <i>s.</i> 11 <i>d.</i> ; stationary and petty expenses, 429 <i>l.</i> 5 <i>s.</i> 1 <i>d.</i> ; taxes and insurances on offices, &c., 456 <i>l.</i> 17 <i>s.</i> 7 <i>d.</i> ; sacks for grain, 110 <i>l.</i> 3 <i>s.</i> 10 <i>d.</i>	8,627	17	0
Coal disbursement account.....	82	0	9
Cartage (Manchester) do.	3,173	18	0
Charge for direction do.	312	18	0
Compensation (coaching) do.	142	4	8
do. (carrying) do.	223	10	11
Coach office establishment do., viz., agents and clerks' salaries, 302 <i>l.</i> 6 <i>s.</i> 8 <i>d.</i> ; rent, 30 <i>l.</i>	632	6	8
Engineering department acct.	319	3	4
Interest do.	5,140	6	4
Locomotive power do., viz., coke and carting, 3,197 <i>l.</i> 4 <i>s.</i> 4 <i>d.</i> ; wages to coke fillers and waterers, 348 <i>l.</i> 8 <i>s.</i> 5 <i>d.</i> ; gas, oil, tallow, hemp, cordage, &c. 865 <i>l.</i> 14 <i>s.</i> 9 <i>d.</i> ; brass and copper, iron, timber, &c. for repairs, 3,755 <i>l.</i> 3 <i>s.</i> 7 <i>d.</i> ; men's wages repairing, 4,401 <i>l.</i> 4 <i>s.</i> 10 <i>d.</i> ; engine and firemen's wages, 784 <i>l.</i> 8 <i>s.</i> 5 <i>d.</i> ; out-door repairs to engines, 613 <i>l.</i> 3 <i>s.</i> 9 <i>d.</i>	13,965	8	1
Maintenance of way account, viz., wages to plate layers, joiners, &c., 2,937 <i>l.</i> 19 <i>s.</i> 2 <i>d.</i> ; stone, blocks, sleepers, keys, chairs, &c., 2,411 <i>l.</i> 2 <i>s.</i> 4 <i>d.</i> ; ballasting and draining, 925 <i>l.</i> 16 <i>s.</i> 11 <i>d.</i> ; new rails, 150 <i>l.</i> 16 <i>s.</i> 3 <i>d.</i>	6,425	14	8
Office establishment account, viz., salaries, 607 <i>l.</i> 2 <i>s.</i> ; rent and taxes, 75 <i>l.</i> 14 <i>s.</i> 3 <i>d.</i> ; stationary and printing, 22 <i>l.</i> 7 <i>s.</i> 8 <i>d.</i> ; stamps, 17 <i>l.</i> 2 <i>s.</i> 3 <i>d.</i>	722	6	2
Police account	1,022	7	6
Petty disbursement do.	61	19	6
Rent do.	603	10	8
Repairs to walls and fences	665	3	4
Stationary engine and tunnel disbursement account, viz., coal, 302 <i>l.</i> 6 <i>s.</i> 5 <i>d.</i> ; engine and brakemen's wages, 319 <i>l.</i> 11 <i>s.</i> 2 <i>d.</i> ; repairs, gas, oil, tallow, &c., 419 <i>l.</i> 15 <i>s.</i> 5 <i>d.</i> ; new rope for tunnel, 266 <i>l.</i> 3 <i>s.</i> 6 <i>d.</i>	1,309	16	6
Tax and rate account	3,409	11	0
Wagon disbursement do., viz., smiths and joiners' wages, 718 <i>l.</i> 19 <i>s.</i> 7 <i>d.</i> ; iron timber, castings, &c., 700 <i>l.</i> 9 <i>s.</i> 1 <i>d.</i> ; cordage, paint, &c., 28 <i>l.</i> 5 <i>s.</i> 2 <i>d.</i> ; canvass for sheets, 163 <i>l.</i> 6 <i>s.</i> 5 <i>d.</i>	1,611	0	3
Cartage (Liverpool)	80	17	10
Law disbursement	390	3	0
	56,350	1	9
Net profits for six months	£40,884	8	4

1st July to 31st December, 1833.

DISBURSEMENTS AFFORTIONED UNDER THE DIFFERENT HEADS OF EXPENDITURE.

	Per Passenger Booked.	Per Ton of Merchandise Liverpool and Manchester	Per Ton of Coal.	Per Ton on Bolton Tonnage	Coaching Department.	Merchandise Department.	Coal Department.	Bolton Tonnage.	Totals.
	s. d.	s. d.	s. d.	s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Disbursements in the merchandise department, consisting of portorage, salaries, parish rates, and insurance, £456 17 <i>s.</i> 7 <i>d.</i> , carting, stationary engine, &c. disbursements.....	.....	3 9½	.....	0 3½	.....	15,150 9 11	.....	249 0 8	15,399 10 7
Disbursements in the coaching department, comprising portorage, salaries, repairs, duty on passengers, £3,224 11 <i>s.</i> 11 <i>d.</i> , &c. &c.	0 9	.....	.....	.....	7,913 8 1	.....	.....	.....	7913 8 1
Portorage, &c. in the coal department, after deducting amount received for weighing coal.....	.....	.....	0 0½	.....	.....	.....	82 0 9	.....	82 0 9½
Locomotive power account, proportioned according to the number of trips of 30 miles in each department, comprising repairs of engines, wages, coke, &c. &c.	0 8½	1 6½	.....	.....	7,779 0 1	6,186 8 0	.....	.....	13,965 8 1
Sundry disbursements, proportioned according to the receipts as between the coaching and merchandise departments, and according to the number of tons and miles conveyed, as between the Liverpool and Manchester and Bolton trade, comprising maintenance of way, police, and gate establishment, general office establishment, &c. &c.	0 6½	0 10½	0 1½	0 7	5,532 0 2	3,494 5 1	262 9 10	547 18 2	9,836 6 3
Rates and taxes, interest on loans, and chief rents, proportioned according to the amount of profit in each department, calculated <i>exclusively</i> of these items of disbursement.	0 6½	0 7½	0 2½	0 1½	6,120 19 11	2,526 6 3	411 1 5	95 0 5	9,153 8 0
Total disbursements.....	2 6½	6 10½	0 4½	0 11½	27,345 8 3	27,357 9 3	755 5 0	891 19 3	56,350 1 9
Net profit.....	2 6½	2 10	0 11	0 5½	27,339 18 8	11,283 19 7	1,836 1 6	424 8 7	40,884 8 4
Gross receipts.....	5 1½	9 8½	1 3½	1 4½	54,685 6 11	38,641 8 10	2,591 6 6	1,316 7 10	97,234 10 1

Statement of Receipts and Expenditure on Capital Account, from the commencement of the undertaking to 31st December, 1833.

TREASURER, DR.

To amount of joint capital in shares and loans.....	£1,086,885	0	0
.. Ditto of dividends not paid.....	1,087	3	1
.. Surplus in hand after payment of the sixth dividend, in August, 1833.....	395	10	2
.. Net profits of the concern for the half year ending 31st December, 1833.....	40,884	8	4
	£1,129,252	1	7

TREASURER, CR.

By amount of expenditure on the construction of the way and the works, including the tunnel, excavations, &c. now in progress.....	1,089,818	17	7
.. Ditto in the hands of Moss & Co., bankers.....	28,476	11	9
.. Ditto in the hands of the treasurer.....	242	15	9
.. Ditto of arrears on calls.....	25	3	6
.. Ditto balance of book debts due to the company.....	10,688	12	0
	£1,129,252	1	7

During the past six months the excavation of the new tunnel from the vicinity of Waverstreet lane to Lime-street has proceeded regularly and satisfactorily, and is now more than half completed.

In order to extend the advantages of a railway conveyance to the northern docks, and those parts of the town which are at a considerable distance from the railway station, the Directors transmitted a memorial to the Common Council, the Dock Committee, and the Commissioners of Sewers, proposing to construct, at the expense of the Company, a line of railway from Wapping to the Clarence Dock, by means of which merchandise deposited at the north end of the port might possess the same facilities of conveyance by railway into the interior of the country as goods in the southern portion of the town, besides relieving the streets from the noise and interruption of numerous waterside carts. This memorial, as might be expected, from the evident utility of the scheme, has been favorably received, especially by the Dock Committee, and the Commissioners of Sewers; the principal objection to the plan being that it was not sufficiently

general and extensive to afford to the public at large that measure of accommodation which appeared so easily practicable. The Directors, however, confidently look forward to the establishment on a comprehensive plan, probably to be undertaken by the Dock Trustees, of a line of railway with the requisite branches, along the dock quays from the northern to the southern extremities of the port; which measure seems alone wanting to give to the mercantile public those advantages of economy and despatch which a railway conveyance is so peculiarly calculated to afford.

The proprietors are aware that the subject of locomotive engines has always been one of great interest and importance. The charge under this head continues very heavy, arising in a great measure from the necessity of renewing and strengthening the frame work of the machinery; and from the purchase of copper and brass plates for the renewal of fire boxes and tubes.

The charge for coke has been a heavy item in the locomotive expenditure, amounting to nearly £6,000 per annum. The directors have lately been induced to try gas coke to a very considerable extent. The cost per ton is less than one-half the cost of Worsley coke; and although a greater weight is required to do the same service, and an extra consumption of fire bars and some other difficulties attend the use of it, the Directors have considered the experiment well worth making, in the hope of diminishing the expenditure in that department.

Several new schemes for an improved locomotive power have lately been brought under the consideration of the Directors. Past experience forbids any very sanguine anticipations of success in respect of untried speculations; at the same time, the Directors will not fail impartially to investigate the pretensions of any scheme from a respectable source, which professes to introduce improvement into so important a branch of the Company's establishment.

The charge for the maintenance of the way is another heavy item of the current expenditure. In particular parts of the road, especially on the descending lines of the inclined planes, the rails prove too weak for the heavy engines,

and the great speed at which they are moved; and from the breakages which have taken place, the Directors have thought it expedient to order a supply of stronger and heavier rails, to put down in those districts where the present rails have been found insufficient. This proceeding will in the first instance subject the Company to some increased expenditure. The Directors, however, have contracted (for the ensuing year) for that portion of the maintenance of way which consists of labor and small materials on terms of comparative advantage to the Company, which they expect will balance the increased outlay required for the purchase of stronger rails.

Observations on Flame—Mr. Rutter's Late Discovery. [From the London Mechanics' Magazine.]

SIR,—There is something very pleasing in applying chemical knowledge to the explanation of the various phenomena that are daily before our eyes. I now propose, with your permission, to make a few observations on the flame of a candle that is now burning on my table. I shall observe, at first, that the heat of the flame melts the tallow, which then ascends the wick by capillary attraction, and is in consequence subjected to intense heat; the tallow is next decomposed, and the principal part of the resulting gas is carburetted hydrogen, which is again decomposed in the following manner: When this gas is first formed, it expands in every direction, and thus getting into the hottest part of the flame, its carbon is deposited in an abundance of fine particles; the hydrogen now increases in volume three and a half times the bulk it possessed when in perfect chemical union with the carbon. This expansion, which is probably again more than doubled by the intense heat of the flame, causes the hydrogen to appear at the outer surface of the flame, where it unites with the oxygen of the atmosphere, and envelopes the white and luminous flame, or that part containing the particles of carbon, with a thin sheet of blue flame.

I now come to a very difficult part of this subject, which, I think, will, when satisfactorily explained, have a great tendency to illustrate Mr. Rutter's discovery of the advantage of burning water with coal-tar, which is by far the greater part carbon; *the difficulty is, to account for the appearance of oxygen in the interior of the flame.* Lord Bacon proved that flame would burn within the interior of flame; and Dr. Ure, in his *Dictionary of Chemistry*, relates a similar experiment, and gives the following definition of flame, founded on the researches of Sir H. Davy: "The flame of combustible bodies may, in all cases, be considered as the combustion of an *explosive mixture* of inflammable gas, or vapor, with air." It may seem very presumptuous in me to differ with such authorities as Davy and Ure, but my defence is, that I regard truth more than all the authorities in the world. I question the truth of the above definition of flame on this ground, that the flames of "*explosive mixtures*" give no light, but afford merely a feeble blue flame. This is the case with explosive mixtures of coal-gas, oil-gas, and indeed all gases containing carburetted hydrogen or olefiant gas; surely, then, the flame of a candle, or of olefiant gas from a small aperture, exhibits phenomena very different from the combustion of an explosive mixture. After giving the aforementioned definition, Dr. Ure says, alluding to flame: "It cannot be regarded as mere combustion at the surface of contact of the inflammable matter. This fact is proved by holding a taper or a piece of burning phosphorus within a large flame made by the combustion of alcohol. The flame of the taper or phosphorus will appear in the centre of the other flame, proving that there is oxygen even in its interior part." This is, in my opinion, no proof whatever of oxygen being in the interior part. There may be carbonic acid, or

there may be vapor of water, &c.; and what confirms this conjecture, is the well known fact that carbon can decompose carbonic acid, or at least unite with one atom of its oxygen, thus forming carbonic oxide; for carbonic acid is composed of one atom of carbon and two atoms of oxygen. Carbonic oxide may therefore decompose the vapor of water formed by the union of the hydrogen with the oxygen of the atmosphere, or carbon itself may decompose the vapor of water; this latter is my opinion. But, it may be asked, how does the vapor of water find its way into the interior of flame? In the case of the candle-flame, I apprehend, it is by the union of the hydrogen with the oxygen of the atmosphere at the surface of the flame; and I have before explained that the expansion of the hydrogen, when the carbon is deposited, is the cause of its being projected with considerable velocity to the outer surface of the flame. When the hydrogen thus unites with the oxygen, water is formed, which being immediately subjected to extreme heat, expands with great velocity into vapor, which is projected, not only into the interior of the flame, but from the sides where it is formed. The carbon decomposes this vapor, and, by uniting with its oxygen, hydrogen is again formed, which may be repelled by the sudden expansion, which it must have when the carbon seizes the oxygen, to the exterior of the flame, where, uniting with oxygen, it may again return to the interior—and thus play backward and forward many hundred times in a second. This play of affinities would, however, soon cease, were not the supply of hydrogen kept up by the continual and *first* decomposition of the carburetted hydrogen. That vapor is projected from flame is proved when I hold the point of a pair of cold steel snuffers within, say three-eighths of an inch of the flame, by moisture being deposited; but the particles are so fine, and in so small quantity, that a dull appearance only of the steel results, which quickly vanishes on their removal. Should the snuffers be held very near the flame, small drops of water will appear on their removal. As this deposition of moisture takes place when the snuffers are held under the flame, and at a distance of perhaps one-fourth of an inch, I conclude it to be projected with considerable velocity, in the manner before pointed out, from every part of the flame; and I further consider that this atmosphere of vapor may, in some measure, account for the luminous halo which appears to surround the flame of a candle.

There are many other considerations which induce me to believe the above conjectures to be nearly right. One is, that if carburetted hydrogen be mixed with a very small portion of common air, its power of giving light is impaired, for part of the carbon is then burnt in its gaseous combination. Another circumstance that induces me to question the presence of oxygen in the interior of the flame of carburetted hydrogen, is the fact, that a small portion of carbon, when deposited on a small fibre of the wick of a candle, will remain in the white part of the flame without undergoing decomposition. Now, if oxygen were present in an uncombined state, and at such an elevated temperature, who can doubt that an immediate decomposition of the carbon would take place? But, it may be asked, why does not this portion of carbon decompose the vapor of water which you consider to be present in all flames containing hydrogen? One cause may be that the particles of which it is composed attract each other with part of their force, and cannot therefore exert their full force to decompose the vapor. That coal-tar cannot be burned like oil, is because it is nearly all carbon, and has not sufficient hydrogen to form the requisite quantity of vapor—what it does possess being only sufficient to supply part of its carbon with oxygen; the other part of the carbon deposited rises from the flame in dense black smoke. It may be further inquired,

why does not the black smoke, or the carbonaceous particles arising from a hot flame, unite with the oxygen of the atmosphere, and so form carbonic acid, which is invisible? I apprehend it is because of their low capacity for heat, and the instantaneous radiation of heat from their surfaces; the particles being thus deprived of their heat cannot unite with oxygen, which is also cold—for the union of carbon with oxygen will not take place under a dull red heat. Is it possible, then, to burn coal-tar without producing smoke? Nothing is more easy to a person possessing a slight knowledge of chemistry; let a long tunnel of fire-brick be constructed, leading to a chimney, and let a coal fire be lighted till the sides of this tunnel become of a white heat; if a small stream of coal-tar be now introduced, it will inflame, and as the particles of carbon deposited cannot lose their heat, and will be floating in a strata of air heated to redness, their union with oxygen must take place, provided sufficient air be admitted with the stream of coal-tar.

I shall now conclude with a few words on Mr. Rutter's project of introducing a small quantity of water with the tar. The water will first be formed into vapor, which will require some portion of heat; now this vapor may be decomposed by the carbon, when the hydrogen will again unite with the oxygen of the atmosphere, and vapor will again be formed, till the decomposition of all the carbon is complete. Perhaps two gallons of water is more than one gallon of coal tar could be made to decompose, and it would be very gratifying to me to see the actual fact proved by experiments so conclusive as to satisfy the doubts of the most sceptical. Your Salisbury correspondent states, that "15 lbs. of coal-tar," which I suppose is about equal to an imperial gallon, "and an equal bulk of water," say 10 lbs., "and 25 lbs. of Newcastle coke, will be found equal to 120 lbs. of Newcastle coal." But this is on the supposition that the whole of the water will be decomposed, which I consider a practical impossibility, for a large portion of the carbon must unite with the oxygen admitted to inflame the hydrogen.

Should Mr. Rutter, however, have formed too high an estimate of the heat gained by his process, there are other advantages attending it which must not be overlooked; for two intense chemical actions are supported with the same volume of air that either of them would require separately, which is of great importance in its application to steam boilers. Your Salisbury correspondent has certainly blundered in endeavoring to explain this. (See his paragraph, page 452, beginning with "Another condition," and ending with "gases.") He is also wrong in saying, (page 453,) "The sides of the furnace in that vessel formed a part of the boiler, consequently their temperature never exceeds that of the contained water." How then is the heat communicated, if both sides are of the same temperature? According to my experience, the sides of boilers are often many hundred degrees hotter than the contained water, and sometimes red hot just at the outer surface.

I have no other object in making these remarks than to elicit truth, and prevent scientific men from trusting too much to "hope's delusive mine." I remain, sir, your obedient servant,
WILLIAM WITTY, Jun.

ANALYSIS OF OYSTER SHELLS.—One hundred grains of oyster shell will give Carbonate of Lime, 95.18; Phosphate of Lime, 1.88; Silica, 0.40; Water, 1.62; Insoluble animal matter, 0.45; Loss, &c. 0.46. From this view of the composition of recent oyster shell, it is obvious that no appreciable advantage can be expected in applying it as a manure from the minute proportion of animal matter which it has been shown to contain. It is as a carbonate of lime, and that nearly in a state of purity, that it should claim the attention of the agriculturist.—[Farmers' Register.]

On Railroad Wheels, &c. By WM. M. CUSHMAN. To the Editor of the Mechanics' Magazine and Register of Inventions and Improvements.

SIR,—There are few applications of science which make such continual and importunate calls upon its resources as the subject of railroads—its principles having place as well in the minute, as the more prominent parts; and to such an extent does this obtain, that, although casuists might dispute the endowment of sensibility, we may with some propriety credit the "sympathy" which subsists among its various constituent parts.

To those of your readers who know the important part the appendage, which forms the subject of this paper, acts in the successful operation of a railroad, no apology for its appearance would be proper or necessary. Impressed, however, with the belief that, in matters of science, nostrums and secrets are the peculiar property of empiricism, I am persuaded that liberality, to a certain extent, among engineers, in a mutual interchange of ideas through public journals devoted to such objects, will be attended with the most beneficial results to the profession and its members generally—it is the hope of contributing a trifle to such result, which induces me to send for publication, the subsequent compilation from my common-place book.

The problem assigning to the parts of the wheel the proportions requisite to sustain a given stress, has been investigated;* but as I have never seen any discussion touching the particular distribution of metal to obtain the requisite strength with the least quantity of metal, and at the same time to offer the least resistance to motion, after briefly reciting the mode of proceeding in order to attain the single condition of strength, I propose to examine that necessary to the attainment of the latter conditions.

To determine the dimensions of the rim, arms, &c., consider them rectangular prisms, calculate the stress these prisms will bear; and lastly, dispose them in the best form for strength and motion on the various parts of the line.

Each arm must be of sufficient strength to bear the greatest stress that can ever fall upon it, which is half the weight of the car and its load; then this formula holds,

$$\frac{S}{2200} = a; (1.)$$

in which S is put for half the weight, and a for the surface in inches of the section of the arm.

In the rim this formula holds,

$$t = \sqrt{\frac{c \times S}{850b}}; (2.)$$

in which c = the length of the arc between the arms, in feet, at the mean diameter of the rim; S, as before; b = the breadth of the rim, in inches; and t = the thickness of the prism, in inches—to be disposed in the best form for strength and for the rim. The formula (2) is general, but the other is affected by the number of arms; it is designed for a 3 feet wheel, having 10 arms, or a 5 feet wheel, having 12.

But since, in rolling bodies, each particle of matter resists motion in proportion to the square of its distance from the axis of motion, it is evidently an object of the first importance to dispose of the weight of metal as near the axis of motion as is consistent with strength, safety, and the perfection of the wheel in other respects.

To illustrate the effects of this principle, let

*Vide Tredgold on Railroads. Science is deeply indebted to this author: his work on railroads, however, published in their stunted infancy, although in many particulars sound, is in others behind the age; it has the merit of having been a pioneer—of having demarcated by a rigorous application of scientific principles, the absurdities which at that period entangled the subject. It is in our own country that many of its most important principles have been developed, with a rapidity corresponding with the fertile genius of our countrymen, and the impetus and zeal every object to which they direct their attention receives.

the weight of a car and its load be 3 tons, and suppose further, that a wheel of 3 feet diameter is the height most suitable for the road it is to run upon. Now, if it be desired to sustain a given constant weight by a prism of a given breadth, supported at each extreme, it is manifest that, as the distance between the supports is increased, the depth of such prism must likewise be increased in a certain ratio; and vice versa. This condition is expressed in formula (2.) in its true ratio—hence, in increasing the number of arms, we diminish the weight of the rim, and effect a transfer of metal towards the centre of motion; and this may be done without injury to the wheel in any respect.

I shall in the first place assume formula (1) to be general, to illustrate the effect resulting solely from the change of place of the metal from the exterior towards the interior.

Excluding the part of the radius occupied by the nave and rim, the quantity of metal for an arm will be 19.92 cubic inches, and on the hypothesis of 10 arms, the surface of a section through the rim will be 4.090 inches; but on the hypothesis of 9 arms, the sectional surface is 4.315 inches: hence the volume of the rim for 10 arms is less than that for 9, by 25.5 cubic inches.

These preliminaries made, in order to effect a comparison of the efficiency of the two wheels:

Let the prism representing the volume of any arm be divided into an indefinite number of equal parts, by planes cutting it orthogonally, and m = one of these parts; let also r, r', r'', r''', &c., ad infinitum, be the respective distances of these quantities from the axis of motion, and x = the sum of the rectangles of the subdivisions into the squares of their respective distances from the axis: then, by the law, we get

$$mr^2 + mr'^2 + mr''^2 \text{ \&c. ad inf.} = x;$$

which expression, since each term is affected by the same quantity m, becomes

$$m(r^2 + r'^2 + r''^2 \text{ \&c. ad inf.}) = x; (3.)$$

In assigning a value comparatively small to m, we shall have for all practical purposes the value of x: thus, let m = $\frac{1}{30}$ of the mass of the arm, which (taking the diameter of the nave 5 inches, and considering the last half inch of the arm merged in the rim,) is represented by 19.92: then, r, r', r'', &c. become 1, 2, 3, 36; and,

$$\frac{19.92}{30} (6^2 + 7^2 + 8^2 \text{ . . . } 35^2) = 9864. = x. (5.)$$

Again, since the matter in the rim lies in a circle described about the axis, it is at every point equally distant from the axis; its mass, therefore, drawn into the square of its distance from the axis, will be its moment of inertia: hence,

$$36^2 \times 25.5 = 33048 = x'; (6.)$$

wherefore, the relative resistances to motion of the means used to attain the same end, in the two wheels, are as

$$x : x' :: 1 : 3.35.$$

2d. But the mass of each arm may, in general, be diminished in the ratio of the increase of value to that contemplated in formula (1.) in consequence of conditions entering therein.

The value of x (form. 5) is reduced by the addition of a single arm, $\frac{1}{3}$ for each arm; their sum being 9, gives x for the total diminution in resistance to motion offered by each, which in amount is just sufficient to make the new arm; whence the relative moments are as

$$x : x + x' :: 1 : 4.35;$$

if the number be increased to 11, the relative moments stand thus,

$$1 : 6.94;$$

if to 12, thus,

$$1 : 9.62;$$

and so on for a greater number.

Such are the results when the principle of momentum of inertia enters as a condition in the determination of the problem.

Extending this principle, we see that the wheel of greatest efficiency with the least quantity of metal would be one without spokes, i. e. having a sheet of metal extending from the nave to the rim: but the limit to the number of arms will be attained when the rim has such a thickness that, when further reduced, there would be danger of fracture from other causes than the stress it is to bear.

I shall not extend my remarks further. By those acquainted with subjects of this nature, the consequences which flow from them will readily be appreciated. My aim has been not to define with precision the exact form necessary in practice, but to illustrate the importance of introducing the principle of momentum of inertia; and to indicate, in a general manner, the changes which ought to be made in the ordinary form, from its introduction.

WM. M. CUSHMAN, C. E.

Albany, April 14, 1834.

AMERICAN PATENT—Specification of a Patent for Improvements in the Wheels of Railroad Carriages. Granted to JOHN ELGAR, Civil Engineer, City of Philadelphia, November 19, 1833.

To all whom it may concern, be it known, that I, John Elgar, Civil Engineer of the city of Philadelphia, have invented certain improvements in the wheels of railroad carriages, by one of which improvements they are made to adapt themselves more readily to curved roads than such as have been heretofore used for that purpose; and by the other a construction is given to them which will render them more firm and durable than those now in general use; and I do declare that the following is a full and exact description of my said improvements.

The self-adjusting conical wheel for running upon curved roads is well known to engineers, it having been made the subject of a patent by Mr. James Wright, and a modified form of it being now used on the Baltimore and Ohio railroad. The plan which I have devised is a new modification of this principle, by which some of the inconveniences which have hitherto attended its employment are in a great degree, if not altogether, obviated.

Instead of making the wheel conical on its whole tread, like Wright's, or of forming the conical part against the flanch, and leaving the other part cylindrical, as in those used on the Baltimore road, I form the cone on the outer part of the tread of the wheel, opposite to the flanch, leaving that part of the tread which extends from the flanch towards the opposite side cylindrical, or nearly so, for one half of its width, more or less, and then tapering outwards in such degree as may be most convenient, according to the curvature of that part of the road which has the smallest radius.

The curved part of the road is adapted to these wheels, by widening the track in proportion to the radius of curvature, so as to admit the conical part to roll on the interior rail, whilst the cylindrical part bears upon the exterior rail. This construction obviates the objection arising from the wrong tendency of the cone when running on the exterior rail, and adapts the whole more perfectly to those parts of the road which are straight, and produces other advantages, which will readily occur to experienced engineers.

In order to render railroad wheels more firm and durable than those now in use, I form that part of the wheel usually occupied by the spokes of two plates of iron, preferring for this purpose thick sheet iron of three eighths of an inch, more or less, in thickness. These sheets of iron are raised so as to be concave, or dishing, forming the segments of a large sphere, or, if preferred, they may be made conical. These plates have a hole in their centres to receive the hub, or nave, and have a flanch turned up, over which the hoop of the hub may pass; or, if preferred, the hub may be secured in other ways. If the rim or tire

is of wrought iron, the plates may have a flanch turned at their peripheries, through which they may be rivetted on the interior of the rim. When the rim is of cast iron, the plates may be secured without a flanch, one being cast within the rim, on either side, against which the plates may fit, rivets or bolts passing through them and through the flanch, to secure them in their places. Other modes of fixing the plates in their places may be devised, and I do not mean to confine myself to any specific plan of effecting this object, the manner of doing so not in any way affecting the principle upon which my improvement is founded. This mode of construction is particularly adapted to wheels for locomotive engines, that run either on common roads or on railways.

What I claim as my invention in my first described improvement, is the making the wheel of a railway carriage conical on its outer edge, and cylindrical between said conical part and the flanch, for the purpose of adapting it to run upon curved roads, and applying it thereto upon the principle, and in the manner herein before set forth.

What I claim as my invention in my second described improvement, is the substituting of metallic plates (generally of wrought iron,) for the spokes usually employed; and the giving to such plates a form which shall be convex, either curved or conical, from the rim to the hub of the wheel.

JOHN ELGAR.

IMPORTANT DISCOVERY.—We are informed by two gentlemen who lately passed through Syracuse, N. Y., that Mr. Avery, the proprietor of an extensive iron foundry in that place, has made a very important discovery in relation to casting of iron. The best kind of earth used in foundries is brought we believe from Canada. Mr. Avery analyzed this earth, and found it to contain a certain portion of blue clay. Following this up by a series of experiments, he discovered that if *common fine sand* was mixed with *common blue clay*, in the proportion of one tenth part of clay to nine tenths of sand, it would constitute the best possible composition for casting that he had ever used. Even the most delicate castings came out perfectly free of sand, and required no sort of cleaning by vitriol. He dismissed ten of his cleaners on the spot. Mr. Avery has taken out a patent for his discovery, and estimates that his composition will make an immense saving in the expense of iron foundries—in the diminution of labor, the cheapness of the sand, and in the disuse of vitriol in the process of cleansing. We hope that our neighbors of the furnace will immediately test it by experiment.—[Brattleboro' Independent Inq.]

THE BANKS OF NEWFOUNDLAND.—These banks extend over a space of forty thousand miles, and are from thirty to forty-five fathoms below the surface of the ocean. The shoals are inhabited by innumerable tribes of muscles and clams, to which it is a favorite residence, as they can easily bury their shells in the soft sand. They have enemies to contend with. The cod fish resort to this coast to prey on them. They keep a constant watch, and swim about a foot above the sub-marine sands; when a muscle opens its shell, it is immediately seized and devoured. At other times the fish do not wait; they are provided with a horny protuberance round their mouths; with these they burrow in the sand, and capture the muscle in its shell. The fishermen of various nations, French, English, and Americans, who resort to these banks, take annually from eight to ten millions of fish; on opening them they find the remains of twenty or fifty muscles in each; sometimes the muscle shells are found either wholly or partially dissolved. The first care of the fishermen, after taking their sta-

tions, is to ascertain the depth of water; the lines must be regulated so as to lie on the bottom, where the fish are always engaged in this species of sub-marine war

FEMALE SUPREMACY.—By all external symptoms, says an amusing writer in this month's Metropolitan, we may apprehend that the reign of women is fast approaching: look at the present aspect of Europe; a Queen of Spain, a Queen of Portugal, a prospective Queen of England. So that we are, at last, to be duly brought under "petticoat government." There is, too, Mrs. Norton conducting a magazine, and Mrs. Cornwall Wilson a weekly publication. Have not women invaded literature and art in all its branches—nay, the most awful arcana of science? There is Mrs. Somerville teaching us the mechanism of the heavens; while Miss Harriet Martineau gives us lessons on political economy.—[London paper.]

SALT.—The people of Onondaga County, N. Y., believe that they have under them an inexhaustible mass of rock salt, and that in raising this, instead of brine, they shall save half the expense of manufacturing, and be able to supply the Atlantic towns with salt cheaper than they can import it. There is one difficulty which now threatens, and that is the expense of fuel. The wood now used at the different salt springs now in operation amounts to 400 cords a day, and as the works are in use 200 days in a year, the annual consumption is 80,000 cords.

PRODUCTS AND PROFITS OF A FARM.—Full debit and credit accounts of farming operations afford one of the best sources of practical information. The following is from the Farmer's Register:

Sir—At the solicitation of a friend I am induced to give a statement of the products of my farm for the year 1833, and of its general arrangement. In doing this, as my grain is not yet all thrashed and taken to market, I cannot now arrive at perfect accuracy; but from what is, thrashed and sold, I can make a correct estimate of the quantity, and I have ascertained the price for such as has not been actually sold. My farm is situated on an extensive plain, that was once covered pretty generally with small pine timber. The soil is sand, occasionally gravel, and more or less mixed with loam. It consists of two hundred acres, of which thirty acres are in wood, twenty in meadow, and ten acres of waste, leaving for cultivation about one hundred and forty acres of arable, or land used for the plough, which is divided into seven lots, of twenty acres each. One of these lots is planted in corn, on clover seed. The corn is the large twelve rowed early yellow, and my usual produce is about fifty bushels per acre. My mode of cultivation is, that after the lot has lain one year in clover, to plough it the last of April or first of May, about six inches deep; then furrow both ways with a light corn plough; the first time across the furrows about two feet nine inches apart, the next about three feet. I plant immediately after furrowing. As soon as the corn is up the length of the finger, I harrow it with a large heavy harrow lengthwise with the furrow, as the ground was originally ploughed, and take two rows at a time. Two men or boys follow the harrow with aprons, out of which they plaster the corn, and also raise any plants which may have been thrown down by the harrow passing over them. In a week after I plough once between the rows as they are planted the narrowest way; the men follow with the hoe, and they will finish twenty acres in ten days. In about a fortnight more, I plough it the widest way of planting, twice between the rows, and throw the ground towards the plant. I cut the stalk above the ear as soon as the kernel in the ear is hard, and secure the stalks in shocks. We husk the corn on the hill, and two men will gather

one hundred bushels of ears in a day. The lot which was in corn, I put down the succeeding year to oats, and it commonly produces about forty bushels per acre. This lot I seed down with western clover seed, eight quarts per acre. Two lots are in wheat which were likewise the year previous in clover seed. The one is ploughed the first of August, and again just previous to sowing in September; the other but once the last of August or first of September, about a fortnight previous to sowing. These lots have the benefit of my barn manure, which is scattered on such portions as I think require it most.

I commonly sow about one bushel twelve quarts per acre, and my common yield is twenty bushels of wheat per acre. Thus four lots are employed, one in corn, one in oats, two in wheat; the remaining three are in pasture. Two of these are again to be ploughed up in the fall for wheat, and the remaining one is for corn the succeeding season. The experience of twenty years has confirmed me in the belief that this is the most successful mode of cultivation in our soil, and I have at all events been satisfied with the amount of produce my farm has yielded me. I annex a statement showing the amount of produce and the proceeds therefrom of my farm, for the year 1833, and the expenses of its management.

Cr.

20 acres meadow, 2 tons hay per acre, sold a \$7½ per ton,	\$300 00
20 acres producing 1,000 bushels corn, for which I am offered 62½ cts. per bushel,	625 00
40 acres producing 800 bushels wheat, sold a \$1½,	850 00
20 acres producing 800 bushels oats, sold a 37½,	300 00
500 bushels potatoes a 2½	125 00
3000 weight of pork, a \$5 50,	165 00
Sold one beef,	25 00
500 lbs. butter, a 16 cts.,	80 00
225 lbs. wool, a 4½	112 00
55 lambs, increase of my flock,	80 00
	\$2,662 00

The item of pasturage not put down.

Dr.

To hiring one man per year,	\$100 00
To do. do. seven months,	70 00
To hiring 15 days in haying and harvest,	13 12
3½ tons plaster a \$7 50,	26 25
3½ bushels clover seed a \$7 50,	26 25
Taxes,	15 00
Mechanics' bills,	50 00
	320 63

Income,	\$2,341 38
The farm sold a \$60, for 200 acres,	\$12,000
Stock and implements valued at	1,000
	\$13,000
Interest on this sum at 7 per ct.,	910 00
Gain,	\$1,431 83

Making the entire interest upon \$13,000, after deducting expenses, about 18 per cent. There are other profits from the farm not enumerated in the within statements, such as house-rent, garden, orcharding, raising of poultry, &c. I will put them against any little incidental expenses not enumerated, but which they will be amply sufficient to defray. The labor upon my farm is performed by two men as above stated, but under my own direction, and all our operations tend to lessen the amount of labor as much as practicable; and I find that nothing conduces more to this result than to keep ahead of my work through the season. For myself, I labor but moderately, but keep up a constant supervision. I will only farther add, that since I have adopted the principle of total abstinence from ardent spirits, at all seasons of the year, I think I have not only gained vastly in the amount of work done by my men, but my farming business has gone on more cheerfully.

Yours, respectfully,

TEUNIS HARDER.

Kinderhook, Columbia Co. Jan. 14, 1834.

In consequence of the resignation of the Postmaster at Kittery, Maine, and no candidate being recommended to succeed him, the Postmaster General has discontinued that office.—[Eastern Argus.]

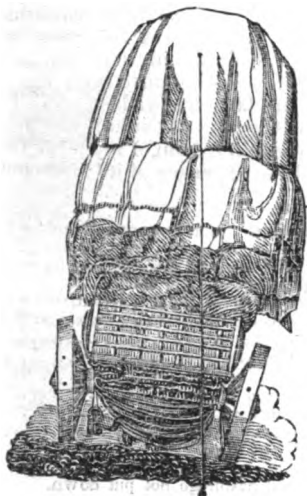
Animal Mechanics, or Proofs of Design in the Animal Frame. [From the Library of Useful Knowledge.]

(Continued from page 215.)

There is another curious circumstance in the form of the thigh bone, showing how it is calculated for strength as well as freedom of motion. To understand it we must first look to the *dishing* of a wheel. The dishing is the oblique position of the spokes from the nave to the felly, giving the wheel a slightly conical form. When a cart is in the middle of a road, the load bears equally upon both wheels, and both wheels stand with their spokes oblique to the line of gravitation.

If the cart is moving on the side of a barrel shaped road, or if one wheel falls into a

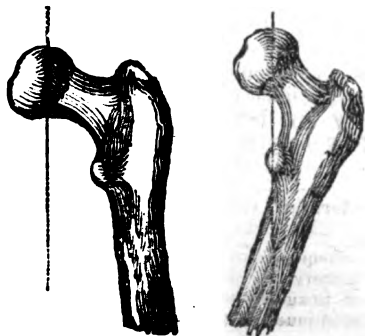
Fig. 17.



rut, the whole weight comes upon one wheel; but the spokes of that wheel, which were oblique to the load, when it supported only one-half of the weight, are now perpendicular under the pressure, and are capable of sustaining the whole. If roads were made perfectly level, and had no holes in them, the wheels of carts might be made without dishing; but if a cart is calculated for a country road, let the wheelwright consider what equivalent he has to give for that very pretty result proceeding from the obliquity of the spokes, or *dishing* of the wheel.

When we return to consider the human thigh bone, we see that the same principle holds; that is to say, that whilst a man stands on both his legs, the necks of the thigh bones are oblique to the line of gravitation of the body; but when one foot is raised, the whole body then being balanced on one foot, a change takes place in the position of the thigh bone, and the obliquity of that bone is diminished; or, in other words, now that it has the whole weight to sustain, it is perpendicular under it, and has therefore acquired greater strength.

[Fig. 18.]



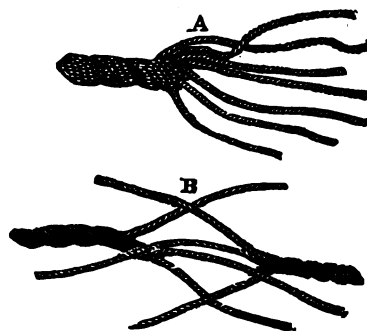
CHAPTER V.

OF THE TENDONS COMPARED WITH CORDAGE.—Where nature has provided a perfect system of columns, and levers, and pullics, we may anticipate that the cords by which the force of the muscles is concentrated on the moveable bones, must be constructed with as curious a provision for their offices. In this surmise we shall not be disappointed. To understand what is necessary to the strength of a rope or cable, we must learn what has been the object of the improvements and patents in this manufacture. The first process in rope making is hatcholling the hemp; that is, combing out the short fibres, and placing the long ones parallel to one another. The second is spinning the hemp into yarns. And here the principle must be attended to, which goes through the whole process in forming a cable; which is that the fibres of the hemp shall bear an equal strain; and the difficulty may be easily conceived, since the twisting must derange the parallel position of the fibres. Each fibre, as it is twisted, ties the other fibres together, so as to form a continued line, and it bears at the same time a certain portion of the strain, and so each fibre alternately. The third step of the process is making the yarns. Warping the yarns is stretching them to a certain length; and, for the same reason that so much attention has been paid to the arrangement of the fibres for the yarns, the same care is taken in the management of the yarns for the strands. The fourth step of the process is to form the strands into ropes. The difficulty of the art has been to make them bear alike, especially in great cables, and this has been the object of patent machinery. The *hardening* by twisting is also an essential part of the process of rope-making; for without this it would be little better than extended parallel fibres of hemp. In this twisting, first of the yarns and then of the strands, those which are on the outer surface must be more stretched than those near the centre; consequently, when there is a strain upon the rope the outer fibres will break first, and the others in succession. It is to avoid this that each yarn and each strand, as it is twisted or hardened, shall be itself revolving, so that when drawn into the cable the whole component parts may, as nearly as possible, resist the strain in an equal degree; but the process is not perfect, and this we must conclude from observing how different the construction of a tendon is from that of a rope. A tendon consists of a strong cord apparently fibrous, but which, by the art of the anatomist, may be separated into lesser cords, and these by maceration, can be shown to consist of cellular membrane, the common tissue that gives firmness to all the textures of the animal body. The peculiarity here results merely from its remarkable condensation. But the cords of which the larger tendon consists do not lie parallel to each other, nor are they simply twisted like the strands of a rope; they are, on the contrary, plaited or interwoven together.

If the strong tendon of the heel, or Achilles tendon, be taken as an example, on first inspection it appears to consist of parallel fibres, but by maceration these fibres are found to be a web of twisted cellular texture. If you take your handkerchief, and, slightly twisting it, draw it out like a rope, it will seem to consist of parallel cords; such is, in fact, so far the structure of a ten-

don. But, as we have stated, there is something more admirable than this, for the tendon consists of subdivisions, which are like the strands of a rope; but instead of being twisted simply as by the process of hardening, they are plaited or interwoven in a way that could not be imitated in cordage by the turning of a wheel. Here then is the difference: by the twisting of a rope the strands cannot resist the strain equally, whilst we see that this is provided for in the tendon by the regular interweaving of the yarn, if we may so express it, so that every fibre deviates from the parallel line in the same degree, and consequently receives the same strain when the tendon is pulled. If we seek for examples illustrative of this structure of the tendons, we must turn to the subject of ship rigging, and see there how the seaman contrives, by undoing the strands and yarns of a rope, and twisting them anew, to make his splicing stronger than the original cordage. A sailor opens the ends of two ropes thus:*

Fig. 19.



and places the strands of one opposite and between the strand of another, and so interlaces them. And this explains why a hawser-rope, a sort of small cable, is spun of three strands; for as they are necessary for many operations in the rigging of a ship, they must be formed in a way that admits of being cut and spliced; for the separation of three strands, at least, is necessary for knotting, splicing, whipping, mauling, &c. which are a few of the many curious contrivances for joining the ends of ropes, and for strengthening them by filling up the interstices to preserve them from being cut or frayed. As these methods of splicing and plaiting in the subdivisions of the rope make an intertexture stronger than the original rope, it is an additional demonstration, if any were wanted, to show the perfection of the cordage of an animal machine, since the tendons are so interwoven; and until the yarns of one strand be separated and interwoven with the yarns of another strand, and this done with regular exchange, the most approved patent ropes must be inferior to the corresponding part of the animal machinery.

A piece of cord of a new patent has been shown to us, which is said to be many times stronger than any other cord of the same diameter. It is so far upon the principle here stated, that the strands are plaited instead of being twisted; but the tendon has still its superiority, for the lesser yarns of each strand in it are interwoven with those of other strands. It however gratifies us to see, that the principle we draw from the animal body is here confirmed. It may be

* A strands and yarns opened. B, ends opened and laid for splicing, in a manner exactly like the interlacing of the tendon.

asked, do not the tendons of the human body sometimes break? They do; but in circumstances which only add to the interest of the subject. By the exercise of the tendons, (and their exercise is the act of being pulled upon by the muscles, or having a strain made on them,) they become firmer and stronger; but in the failure of muscular activity, they become less capable of resisting the tug made upon them, and if, after a long confinement, a man has some powerful excitement to muscular exertion, then the tendon breaks. An old gentleman, whose habits have been long staid and sedentary, and who is very guarded in his walk, is upon an annual festival tempted to join the young people in a dance; then he breaks his tendo Achillis. Or a sick person, long confined to bed, is, on rising, subject to a rupture or hernia, because the tendinous expansions guarding against protrusion of the internal parts, have become weak from disease.

Such circumstances remind us that we are speaking of a living body, and that, in estimating the properties of the machinery, we ought not to forget the influence of life, and that the natural exercise of the parts, whether they be active or passive, is the stimulus to the circulation through them, and to their growth and perfection.

CHAPTER VI.

OF THE MUSCLES—OF MUSCULARITY AND ELASTICITY.—There are two powers of contraction in the animal frame—elasticity, which is common to living and dead matter, and the muscular power, which is a property of the living fibre.

The muscles are the only organs which properly have the power of contraction, for elasticity is never exerted but in consequence of some other power bending or stretching the elastic body. In the muscles, on the contrary, motion originates; there being no connection, on mechanical principles, betwixt the exciting cause and the power brought into action.

The real power is in the muscles, while the safeguard against the excess of that power is in the elasticity of the parts. This is obvious in the limbs and general texture of the frame; but it is most perfectly exhibited in the organs of circulation. If the action of the heart impelled the blood against parts of solid texture, they would quickly yield. When by accident this does take place, even the solid bone is very soon destroyed, but the coats of the artery which receive the rush of blood from the heart, although thin, are limber and elastic; and by this elasticity or yielding, they take off or subdue the shock of the heart's action, while no force is lost: for as the elastic artery has yielded to the sudden impulse of the heart, it contracts by elasticity in the interval of the heart's pulsation, and the blood continues to be propelled onward in the course of the circulation, without interval, though regularly accelerated by the pulse of the heart.

If a steam engine were used to force water along the water-pipes, without the intervention of some elastic body, the water would not flow continuously, but in jerks, and therefore a reservoir is constructed containing air, into which the water is forced against the elasticity of the air. Thus, each stroke of the piston is not perceptibly communicated to the conduit pipe, because the intervals are supplied by the push of the compressed air. The office of the reservoir

containing air is performed in the animal body by the elasticity of the coats of the arteries, by which means the blood which flows interruptedly into the arteries has a continuous and uninterrupted flow in the veins beyond them.

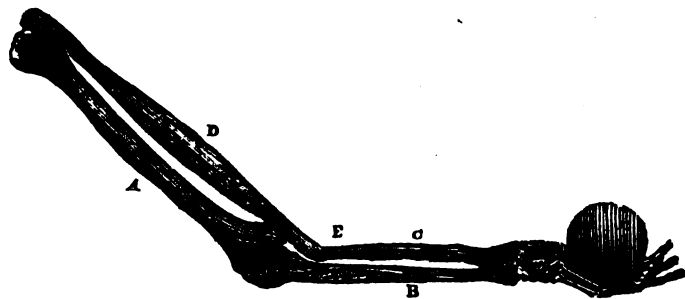
A muscle is fibrous, that is, it consists of minute threads bundled together, the extremities of which are connected with the tendons which have been described. Innumerable fibres are thus joined together to form one muscle, and every muscle is a distinct organ. Of these distinct muscles for the motions of the body there are not less than four hundred and thirty-six in the human frame, independent of those which perform the internal vital motions. The contractile power which is in the living muscular fibre, presents appearances which, though familiar, are really the most surprising of all the properties of life. Many attempts have been made to explain this property, sometimes by chemical experiment, sometimes on mechanical principles, but always in a manner repugnant to common sense. We must be satisfied with saying that it is an endowment, the cause of which it would be as vain to investigate as to resume the search into the cause of gravitation.

The ignorance of the cause of muscular contraction does not prevent us from studying the laws which regulate it, and under this head are included subjects of the highest interest, which, however, we must leave, to pursue the mechanical arrangement of the muscles.

Since we have seen that there are four hundred and thirty-six distinct muscles in the body, it is due to our readers to explain how they are associated to effect that combination which is necessary to the motion of the limbs, and to our perfect enjoyment. In the first place, the million of fibres which constitute a single muscle are connected by a tissue of nerves, which produce a unison or sympathy amongst them, so that one impulse causes a simultaneous effort of all the fibres attached to the same tendon. When we have understood that the muscles are distinct organs of motion, we perceive that they must be classed and associated, in order that many shall combine in one act; and that others, their opponents, shall be put in a state to relax and offer no opposition to those which are active. These relations can only be established through nerves, which are the organs of communication with the brain, or sensorium. The nerves convey the will to the muscles, and at the same time they class and arrange them to as to make them consent to the motions of the body and limbs.

On first looking to the manner in which the muscles are fixed into the bones, and the course of their tendons, we observe everywhere the appearance of a sacrifice of mechanical power, the tendon being inserted into the bone in such a manner as to lose the advantage of the lever. This appears to be an imperfection, until we learn that there is an accumulation of vital power in the muscle in order to attain velocity of movement in the member.

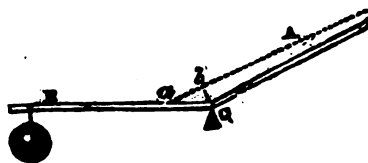
Fig. 20.



The muscle, D, which bends the fore-arm, is inserted into the radius, E, so near the fulcrum, or centre of motion, in the elbow joint, and so oblique, that it must raise the hand and fore-arm with disadvantage. But, correctly speaking, the power of the muscle is not sacrificed, since it gains more than an equivalent in the rapid and lively motions of the hand and fingers, and since these rapid motions are necessary to us in a thousand familiar actions; and to attain this the Creator has given sufficient vital power to the muscles to admit of the sacrifice of the mechanical or lever power, and so to provide for every degree and variety of motion which may answer to the capacities of the mind.

If we represent the bones and muscles of the fore-arm by this diagram, we shall see

Fig. 21.



tendon to the lever into which it is inserted. It represents the lever of the third kind, where the moving power operates on a point nearer the fulcrum than the weight to be moved.

Here A represents the muscle, B the lever, and C the fulcrum. The power of the muscle is not represented by the distance of its insertion, *a*, from the fulcrum C. The line which truly represents the lever must pass from the centre of motion perpendicularly to the line of the tendon, namely C *b*. Here again, by the direction of the tendon, as well as by its actual attachment to the bone, power is lost and velocity gained.

We may compare the muscular power to the weight which impels a machine. In studying machinery it is manifest that weight and velocity are equivalent. The handle of the winch in a crane is a lever, and the space through which it moves, in comparison with the slow motion of the weight, is the measure of its power. If the weight raised by the crank be permitted to go down, the wheels revolve, and the handle moves with the velocity of a cannon ball, and will be as destructive if it hit the workman. The weight here is the power, but it operates

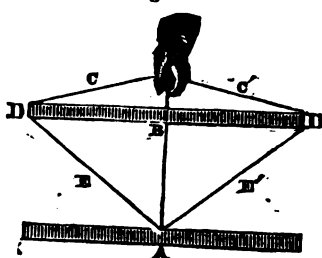
that power is lost by the inclination of the

with so much disadvantage that the hand upon the handle of the winch can stop it: but give it way, let the accelerated motion take place, and the hand would be shattered which touched it. Just so the fly wheel, moving at first slowly, and an impediment to the working of a machine, at length acquires momentum so as to concentrate the power of the machine, and enable it to cut bars of iron with a stroke.

The principle holds in the animal machinery. The elbow is bent with a certain loss of mechanical power; but by that very means, when the loss is supplied by the living muscular powers, the hand descends through a greater space, moves quicker, with a velocity which enables us to strike or to cut. Without this acquired velocity, we could not drive a nail; the mere muscular power would be insufficient for many actions quite necessary to our existence.

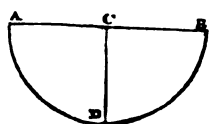
Let us take some examples to show what objects are attained through the oblique direction of the fibres of the muscles, and we shall see that here, as well as by the mode of attachment of the entire muscle, velocity is attained by the sacrifice of power. Suppose that these two pieces of wood, to be

Fig. 22.



drawn together by means of a cord, but that the hand which pulls, although possessing abundant strength, wants room to recede more than what is equal to one-third of the space betwixt the pieces of wood, it is quite clear that if the hand were to draw direct on the cord, A B, the point A would be brought towards B, through one-third only of the intervening space, and the end would not be accomplished. But if the cord were put over the ends of the upper piece, C, D, E, and consequently directed obliquely to their attachment at A, on drawing the hand back a very little, but with more force, the lower piece of wood would be suddenly drawn up to the higher piece, and the object attained. Or we may put it in this form: If a muscle be in the direction of its tendon, the motion of the extremity of the tendon will be the same with that of the muscle itself: but if the attachment of the muscle to the tendon be oblique, it will draw the tendon through a greater space; and if the direction of the muscle deviate so far from the line of the tendon as to be perpendicular to it, it will then be in a condition to draw the tendon through the greatest space with the least contraction of its own length.

Fig. 23.

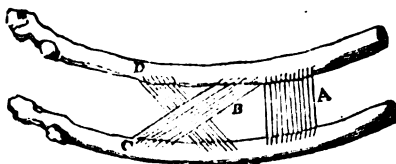


Thus, if A B be a tendon, and C D a muscle, by the contraction of C to D the extremities of the tendon A B will be brought

together through a space double the contraction of the muscle. It is the adjustment on the same principle which gives the arrow so quick an impulse from the spring of the bow, the extremities of the bow drawing obliquely on the string.

To free breathing, it is necessary that the ribs shall approach each other, and this is performed by certain *intercostal* muscles, (or muscles playing between the ribs,) and now we can answer the question, why are the fibres of these muscles oblique?

Fig. 24.



Let us suppose this figure to represent two ribs with thin intervening muscles. If the fibres of the muscle were in the direction A, across, and perpendicular to the ribs; and if they were to contract one third of their length, they would not close the intervening space; they would not accomplish the purpose. But being oblique, as at B, although they contract no more than one third of their length, they will bring the ribs C D together. By this obliquity of the intercostal muscles they are enabled to expand the chest, in inspiration, in a manner which could not be otherwise accomplished.

In the greater number of muscles the same principle directs the arrangement of the fibres; they exchange power for velocity of movement, by their obliquity. They do not go direct from origin to insertion, but obliquely, thus, from tendon to tendon:

Fig. 25.



Supposing the point A to be the fixed point, these fibres draw the point B with less force, but through a larger space, or more quickly than if they took their course in direct lines; and by this arrangement of the fibres the freedom and extent of motion in our limbs are secured.

But the muscles must be strengthened by additional courses of fibres, because they are oblique; since by their obliquity they lose something of their force, and therefore it is, we must presume that we find them in a double row, making what is termed the *penniform* muscle, thus—

Fig. 26.



and sometimes the texture of the muscle is still further compounded by the intermixture of tendons, which permit additional series of fibres; and all this for the obvious purpose of accumulating power, which may be exchanged for velocity of movement.

BLINDNESS OF PASSION, OR MISTAKES OF A KAMTSCHATKAN BEAR.—Fish, which forms their chief nourishment, and which the bears procure for themselves in the rivers, was last year excessively scarce in Kamtschatka. A

great famine consequently existed among them, and, instead of retiring to their dens, they wandered about the whole winter through, even in the streets of the town of St. Peter and St. Paul. One of them finding the outer gate of a house open, entered, and the gate accidentally closed after him. The woman of the house had just placed a large tea-machine, full of boiling water, in the court: the bear smelt to it and burned his nose; provoked at the pain, he vented all his fury upon the kettle, folded his fore-paws round it, pressed it with his whole strength against his breast to crush it, and burned himself, of course, still more and more. The horrible growl which rage and pain forced from him brought all the inhabitants of the house and neighborhood to the spot, and poor bruin was soon dispatched by shots from the window. He has, however, immortalized his memory, and become a proverb amongst the town's-people, for, when any one injures himself by his own violence, they call him "the bear with the tea-kettle."—[Capt. Kotzebue's *New Voyages round the World in the Years 1823-1826.*]

AGRICULTURE, &c.

WATER FOR GREEN-HOUSE PLANTS.—Soft pond water, such as is supplied from the watering or floating of meadows, holds in solution, and in its most limpid state, all the food which most plants require; and it is only such food as they are capable of taking up by their spongioles, or digesting by their system. Such water is not attainable by every person; but I think that a good substitute might be artificially procured by placing some turfs from a common or sheep-walk, into a large wicker-basket; and, after nearly filling the basket with them, to place *two turfs manured with a thin layer between them of poultry or sheep dung*, at the top of the basket. The best and softest water that can be had should then be poured over the turfs till it filtrates, in a clear state, into a recipient vessel placed underneath. A bushel-basket would last, for this purpose, many weeks, and suffice for the saturation of some hundreds of gallons of water with nutritious matter, and also for the detention of other particles which could not be assimilated by the organs of the plants.—[Mr. Mearns, gardener to the Duke of Portland.]

ENCLOSURES.—Most of the modern nations of Europe still enclose their lands in the ancient method. Property is so much subdivided in France by the extinction of the law of primogeniture, that no *field* enclosures are to be observed in that country,—a few march-stones, a row of trees, or particular single trees here and there, marking the boundaries of estates. Throughout Germany, Bohemia, Switzerland, Spain, and Italy, enclosures are only found near farm-houses and villages, the bulk of the corn being raised on extensive unenclosed grounds. On the other hand, the land in Holland and Belgium is in general very much enclosed, so much so, that the fields appeared half choked with hedge-row trees and hedges. The same remark very nearly applies to the south of England, where much valuable ground is occupied with, certainly beautifully luxuriant, but sadly neglected hedges. The land in Ireland is also too much subdivided, and mostly with turf walls, which are generally very unfit to detain live stock. It is in the north of England, and the best cultivated districts in Scotland, that enclosures, suited to the improved state of the husbandry of the kingdom, are to be found. There, not only whole farms are enclosed, but the size of the enclosures conforms to

that system of husbandry which is suited to the nature of the soil. There, the growing crops of all kinds receive shelter from the vicissitudes of the weather, and protection from the depredations of live stock; and the live stock themselves enjoy, as a recompense for their confinement within the enclosures, peace and plenty unmolested.

A fence occupying elevated ground bestows more shelter to fields than in other situations; and on this account, if any other circumstances will permit it, the elevated summits of rising ground ought always to be chosen as the sites of fences. Such sites place a thorn-hedge beyond the crushing power of a heavy fall of snow. But it generally happens that the lower ends of fields cannot be enclosed in a straight line,—a rivulet or hollow between two rising grounds frequently terminating their lower ends. In that case, the fence ought to follow the course of the water or hollow ground, in order to provide an egress for the surface-water coming from both sides of the rising ground. A serpentine fence in a hollow, contrary to one on a rising ground, affords more shelter than a straight one, in the direction of the wind, which almost always takes the direction of the valley. A public road or canal passing through a property, or an old plantation growing in the middle of the land, affects the shaping out of enclosures. Whether any of them exists before or after the land is enclosed, the irregular sides of the enclosures, which alone should contain wedge-shaped ridges, should be placed next the obstacle.

The advantages of enclosing land may thus be summed up. Enclosures shelter corn against the inclemency of the weather, and they prevent the trespasses of men and animals. They not only afford the most excellent shelter to live stock, but they insure them peace and protection while feeding, or when at rest. They enhance the value of land in every situation; and they greatly beautify the appearance of a country. They confer ease of mind to the farmer by securing his crops, and flocks, and herds, from danger; and they impart confidence to the country gentleman, that the enclosing of his estate of land and wood will continually improve his means, so long as he continues to protect it by maintaining the fences in an efficacious manner.

ON THE CULTURE OF THE GARDEN BEAN.—I have been very successful for half a dozen years in obtaining two crops of beans from the plants. In the summer of 1826, my first crop of magazin and early long pod beans was by a very strong and violent wind blown down; this was done when the beans were in full blossom. The crop from the blossoms which the plants then possessed was very fine and abundant, and gathered during July. In three weeks after, the beans were prostrated, each stem pushed forth from near the root one or more, in some instances four to six, fresh stems; these bloomed freely, and produced an abundant crop, which were gathered during September. Since that grew, I have uniformly bent down, so as to break the stalk near the root, my first and second crops of beans; I have by this means obtained four crops of beans from two sowings, and which supplied me from July 1st to 31st October. By this method only half the seed was required which I had been accustomed to use, and the greatest advantage to me was, that only half the ground was required, so that my

advantages by this method are four-fold. I always pinch out the tops when the plants are in full bloom; this throws the vigor into the production of fruit instead of a continued increase of stem and foliage.—[Cobbett.]

RECEIPT FOR DRESSING SALLAD.

BY THE REV. SIDNEY SMITH.

Two large potatoes, pressed through kitchen sieve, Smoothness and softness to the sallad give, Of mordent mustard add a single spoon, (Distrust the condiment that bites too soon;) But deem it not, thou man of herbs, a fault, To add a double quantity of salt, Four times the spoon with oil of Lucca crown, And twice with vinegar procured from town; True flavor needs it, and your poet begs, The pounded yellow of two well boiled eggs; Let onions' atoms lurk within the bowl, And, scarce suspected, animate the whole And lastly, in the flavored compound toss A magic spoonful of anchovy sauce. O! great and glorious,—O! herbaceous treat,— 'Twould tempt the dying anchorite to eat; Back to the world he'd turn his weary soul, And plunge his fingers in the sallad bowl.

BEST TIMES FOR REMOVING LAURELS, &c.—

Evergreens, if taken up carefully, may be planted with success at all seasons. About eight years ago, I superintended the planting of some very large ones, consisting of Portugal, and Common Laurels, Cedars, &c., in the month of July, when the weather was very dry, at Sulby Hall, Northamptonshire, the seat of Geo. Payne, Esq., which did remarkably well. If, however, the situation be dry, and the soil light and sandy, they will in general, with the exception of hollies, do best, if planted in November or December, providing the weather be mild. On the other hand, if the soil be low and retentive of moisture, they thrive best if planted in May. In both cases, it is indispensably necessary that all large plants be taken up with large balls, the roots being as little damaged as possible. S. H.—[Hort. Register.]

SUBSTITUTE FOR HOPS.—I was highly delighted in finding so much in the Register calculated to interest ladies. My wife remarked the other day, that she had got fully the worth of the subscription already. I trust you will, in every number, have an eye to that; and as I have lately become acquainted with a fact which may be convenient to them at some period, I will briefly mention it on this occasion, and if it be indeed new to you, (as it is to me,) you can use it for the interest and instruction of the ladies, if you see cause. It is the substituting the Life Everlasting (the botanical name I do not know,) for hops, in making yeast.

The yeast is made of the dried leaves and flowers just as yeast is made of the hop, and used in the same way. I am informed by those who have used it for some time, that bread is not as apt to become sour, and the flavor is finer than the hop bread. I have no doubt its qualities would be greatly improved if it were cultivated, and the leaves and flowers gathered as soon as they were ripe, and dried in the shade.—[Farmers' Register.]

FORSIL MANURE IN NORTH CAROLINA.—It is enough to make the heart of the patriot bleed, when he reflects what North Carolina is, and what she is capable of being. With every thing in the way of resources, physical and moral, to make her a great, commanding and prosperous state—she is at best but stationary, and which you know is comparative declension. Her population and wealth are deserting her in one continued and augmenting stream, for other climes. And why? Simply because she will not improve the means which the God of Nature has placed at her disposal. Internal improvement is at present a more urgent want with us, than the improvement of our soils. Millions of our resources are lying dormant, for the want of facilities for transportation. Let me offer a single illustration, applicable exclusively to the eastern section of the state. The pine-trees, (long leaf,) of North Carolina, for lumber and naval stores, are unquestionably of greater value

than her slaves, if they could be made available. I have been informed upon the best authority, that 20 per cent. can be cleared on the capital embarked in making turpentine, when convenient to market. But for the want of this convenience, this immense resource can only be called into action on small portions of our navigable streams. I travelled a few days ago from Waynesborough to Fayetteville, a distance of sixty-five miles, through a country heavily timbered with the finest long leaf pines, and saw no evidence during the route of their being used for any thing but plantation purposes. I should except one tar kiln and half a dozen trees designed for tar timber, partly hewn and left to decay—but not one stroke of the axe for turpentine. Hundreds and thousands of acres are in the state that nature formed them. This is but "*e pluribus unum*," to show how profoundly the giant sleeps. But I am trespassing to much of your patience, and will force myself to a conclusion. Yours, &c. ISAAC CROOM.—[Farmers' Register.]

STAINS BY FRUITS are readily removed from clothes by wetting them, and placing them near lighted brimstone; a few matches will answer the purpose.

ARABIAN HORSE.—Perhaps the most remarkable point about the Arabian horse is the extraordinary smallness of the head and mouth,—so small, indeed, is the latter that you would think they might use a common tumbler for a water bucket.

INCREASE OF MANURE BY ROTTING.—It is, we believe, a very general impression that even dry vegetable substances undergo a great loss in rotting, and hence one of the strong and oft repeated arguments of the advocates of long unfermented manures, that 50 per cent. in weight is lost by fermentation, and 50 per cent. in the quality of the remainder. We recommend to their consideration the following extract from an article on the Rotation of Crops, by J. H. Couper, Esq. of South Carolina.

A sufficient amount of manure is yielded to keep the soil in the most productive state, if a stock of animals be kept on the plantation and the dry vegetable matter of the fields be carefully carted to the pens. The expressed cane, tops and leaves, from an acre of cane, yield about 10,000 lbs. of dry vegetable matter. An acre of corn, including blades, stalks, shucks and cobs, about 2500 lbs., when the yield of corn has been 20 bushels;* and the after crop of peas 1000 lbs., together 4500 lbs. An acre of solid peas 2000 lbs. The potatoe vines, pumpkins and turnips, being eat green, contribute only to the production of fluid manure. The total quantity of dry vegetable matter to be applied to the manuring of 16 acres in crop, will therefore be,

4 acres in corn, at 4500 lbs. per acre,	18,000 lbs.
1 " peas and turnips,	2,000
3 " cane, at 10,000 lbs.	30,000
	50,000

which, if merely rotted by rain, will yield 100,000 lbs. of manure; and if rotted by the urine and dung of stock, from 150,000 lbs. to 200,000 lbs.,† or at least 25,000 lbs. of manure to each of the 4 acres proposed to be manured. To this supply of manure must be added from 50 to 70 bushels of cotton-seed from seven acres of cotton to be applied to the four acres of corn; and the peas that are ploughed in, preparatory to the potato crop of vines.

* Mr. Madison estimates the corn-stalk, with its appurtenant offal, at not less than three times the weight of the grain belonging to it.—[Address, Amer. Far. Vol. i. p. 171. See Idem. Vol. iv. p. 404, for Dr. Bellenger's estimate.]

† Three hundred stone of dry wheat straw increased by absorption to 719 stone in seven months. Straw, if simply rotted by moisture from the heavens, will double its original weight; but when rotted by the urine and turnip-fed stock, every ton will yield four tons of manure.—[Sinclair's Code of Agr. ch. iii. sec. 4. 5.]

Plan of an Apiary or Bee-house, by means of which the honey and wax can be taken without destroying the Bees. By G. [From the Quarterly Journal of Agriculture, &c.]

First,—Erect a building of wood, of dimensions according to the extent you may wish to avail yourself of the labor of bees. A frame building of 7 feet square, and 7 feet high to the eaves, will contain 90 hives of the dimensions after mentioned. The front should face the south or south-east. The sides of the house within should be shelved with stout plank, well supported by uprights and cross pieces, to hold the hives. The lower shelf may be about a foot from the floor, and the others about 14 inches apart. A tier of shelves is to be placed in the middle of the house, at the same distances from each other; this arrangement will leave two feet gangway between the shelves for the convenience of passing between the hives. There must of course be a door to each gangway, if the shelves are continued from the front to the rear of the house.

Secondly,—The hives must be made as near as may be of 12 inches square, and 12 inches high outside; it being found that a hive of these dimensions, well filled, is sufficient to support an ordinary swarm of bees through the winter. The hives should have a bottom board to fit close, but it need not be nailed fast; each hive must have two openings at bottom, exactly opposite each other, 3 inches wide, and $\frac{1}{2}$ inch high; these openings are furnished with shutters of tin or thin wood, moveable in a groove, in order to close them when the hives are to be removed. On the opposite side of each hive should be inserted a pane of glass, covered with a shutter, to enable you to see, on raising the shutter, that the hives are full. For the greater convenience of opening and shutting the apertures into the hives, they should be made of a slit of tin long enough to reach from the aperture, when closed, to the outside of the hive. In the front of the house there must be openings to correspond with the front hives within, and on the outside there should be placed a small shelf to each aperture for the bees to alight on.

You may begin to stock your house in the winter with old hives, placing a new hive of the above dimensions in front of the old one, and in the spring the bees, after filling up the old comb, will fall to work in the new hive. As soon as you perceive this, you may drive the bees from the old hive by striking on it, or by injecting the smoke of tobacco, and take it away; or take it away and set it down in front of the house, invert it and take off the bottom board—before night, the bees will have all left it and gone into the new hive. When the new hive is filled, close the apertures, draw it back and place another in front; open the communication, and they will in like manner fill this hive. You thus continue to supply hives till your shelves are full. In the fall you may take up as many as you find there are no bees in, leaving however sufficient honey to support the stock through the winter.

In order to derive the greatest possible advantage from their bees, some people take away in the spring all the old comb and honey that the bees have left unconsumed. But this should not be done until you are well assured that the bees can get their living from the early spring flowers. This can only be done, however, but by those persons

the bees will not sting, or by protecting the hands and face from their attacks.

G.

HORSES AND OXEN.—The following comparison between the expense of a yoke of oxen and a horse at a marketable age is given in the Report of the Trustees of the Kennebec (Maine) Agricultural Society, which we find in the Maine Farmer:

Raising a Horse.		A Yoke of Oxen.	
Use of Stud	\$4.00	Use of Bull	\$2.00
Use of Mare	20.00	Raising Calves	10.00
Keeping first winter	7.00	1st Wintering	12.00
Insurance	1.00	Insurance	50
At 1 year old \$32.00		At 1 year old \$24.50	
2d year—Summering	3.00	2d year—interest	1.49
Wintering	7.00	Summering	4.00
Interest	1.92	Wintering	12.00
Insurance	1.00	Tax	33
Tax	50	Insurance	50
At 2 years old \$45.00		At 2 years old \$42.82	
3d year—Summering	5.00	3d year—Summering	7.00
Wintering	11.00	Wintering	12.00
Interest	2.71	Interest	2.56
Tax	75	Insurance	75
Insurance	1.50	At 3 years old \$65.13	
At 3 years old \$66.38		Price of Oxen	50.00
4th year—Summering	5.00	Price of Horse	60.00
Wintering	15.00	Difference	\$30.00
Interest	13.98	Loss on the Horse	34.36
Tax	1.00	Gain in the Oxen	14.87
Insurance	1.50	Difference to raise	\$49.23
Shoeing	1.50		
At 4 years old \$94.35			
Labor equal to breaking.			

Bots.—Much difference of opinion prevails among farmers, as to the cause of Bots, the manner in which they destroy horses, and the best method of protecting them against their attacks.

The Bots which cause the death of so many horses are hatched from the eggs of a Bee or Insect, which belongs to the Class Insecta, order diptera, genus cestrus. It is affirmed by entomologists that there are two species of the genus cestrus, which deposit their eggs upon horses, but which of the species it is that produces bots, or whether both of them do or not, they are not agreed.

The eggs which produce bots are deposited during the months of August and September, but how they are conveyed to the stomach is also unsettled.

This insect, like others of the same class, passes through different stages. Commencing with the egg, which hatches into a larvæ, which remains in the stomach through the winter, where it continues to increase in size, until the warm weather in the spring, when it passes off with the feces, and changes from its larvæ state to that of the perfect fly, or bee.

It is during the winter or fore part of the spring that these larvæ do the greatest injury to the internal coats of the horse's stomach.

From examination made on the stomachs of horses which have been destroyed by bots, it appears that the larvæ attach themselves to the stomach when small, by their antennæ, or horns, where they continue to increase in size as the season progresses, drawing their nourishment from the juices of the stomach. As the season approaches for their transmutation or transformation from the larvæ to the fly, they become stupid, and let go their hold upon the stomach and pass off with the remains of the animal's food, and from thence into the ground, from whence they emerge perfect insects.

When the number of these larvæ is not great, and the food and exercise of the horse are steady, they do not often affect him; but where the number is great, and the horse is fed irregularly during the last of winter they often prove fatal.

The season when horses are destroyed by bots, in this latitude, is from the middle of February to the middle of May. The remaining nine months in each year there is little danger to be apprehended from them.

Numerous experiments have been made, by immersing them in different substances, after

they have been taken from the stomachs of horses, in order to find something which would destroy them, by being given as a medicine, very few of which have ever given any encouragement of success.

During the time that this insect is in its larvæ state, it is covered with a thick, tough skin, which seems to protect it against the effect of any substance which can be introduced into the horse's stomach with safety.

As it is next to impossible to destroy bots in horses, the greatest safety is in making use of such preventives as are found beneficial.

The first step toward preventing bots undoubtedly is, to keep the horse's legs and sides as clear as possible from the nits or eggs of the insect, by scraping them daily with a sharp knife. By doing this the quantity is supposed to be materially diminished.

The next precaution is to keep horses moderately loose in their bodies, and not to make sudden alterations in their food, nor to treat them in any manner that would have a tendency to render them inclined to fever.

The articles most recommended to be mixed with their food are lime and ashes, either of which, if given in small quantities, during the three months when they are troublesome, are said to be efficacious. Salt is highly recommended by some, who suppose that, if a horse is salted once or twice each week, it will prevent his being troubled.

The manner in which bots operate, is by destroying so much of the inner coat of the stomach as to produce inflammation, or by collecting either at the upper or lower end of the stomach, and obstructing the common passage of the bowels; cathartics are to be recommended.

A late English writer on the diseases of horses says, "when bots fix themselves on the sensible portion of the stomach they may do no harm; but no medicine that we know of will destroy them." Another English writer on this subject says, that bots are generally attached to the insensible part of the stomach, and that while remaining there they produce health rather than injure it. Blaine, as well as most American writers, recommends common salt as one of the best preventives against inflammation from bots, and says it should be given daily.

Treating the disease by bots as an inflammatory complaint, undoubtedly is the course most beneficial, and will come under the same management as other inflammations of the bowels. The same causes that produce ordinary inflammations of the bowels are also liable to produce inflammation from bots, and these are—over-exertion, after which the horse is allowed to stand exposed to cold; poisonous substances mixed with food; but the most fruitful cause is the change of food. Perhaps there are more cases of inflammation produced by this last cause than all others.

Whatever is used as cathartics in cases of inflammation caused by this larvæ in horses, they should always be accompanied with gruel, boiled starch, flax-seed tea, or some thing of the kind, to prevent irritation; and the animal treated in every respect as for an inflammation of the bowels, without any regard to its being caused by bots, and no medicine should be given in the one case which would not be proper in the other. The whole course to be pursued may be summed up in a few words: first bleed, give physic, follow it with mucilaginous drinks, keep the animal warm, and if he recovers, feed moderately for several days.—[Goodsell's Farmer.]

CURE FOR THE BOTS OR GRUBS IN HORSES.—If you will excuse the subject, (for although graceless, it is valuable not only to agriculturists but to all classes, using that valuable animal the Horse,) I send you a remedy I used while our coals were brought to market in road waggons, which obliged us to use a great number of horses; and I never knew it fail of giving relief, in from one to five minutes, viz.: Pour out half a gill of spirit of turpentine

into the hand, and rub it on the breast of the horse while suffering; let it be applied to the hollow or pit of the stomach, just at the point where the neck joins the breast, on a space six to eight inches in diameter. The relief is certain, if the grubs have not already cut through the coats of the stomach.—[Farmers' Register.]

CURE FOR A FILM IN THE EYE OF A HORSE OR OX.—Edward S. Jarvis, Esq. of Surry, Me. in a letter to Mr. Joseph R. Newell, proprietor of the Boston Agricultural Warehouse, states as follows:

Have you ever heard of a cure for a film on the eye of a horse or an ox? I was told of one eighteen or twenty years ago, and have been in the practice of it ever since with perfect success. It was brought to my mind by just having had a proof of its successful application in a calf that had its eye hurt by a blow from another creature. A film formed over it, and it was thought its eye was lost. But by turning into the opposite ear a great spoonful of melted hog's fat, it was cured in 24 hours. I do not pretend to account for this, but I have seen it tried with success so often, that I think it ought to be made public, if it has not been before. I learned it of an Indian.

INOCULATING.—Mr. A. Robinson, in the Northern Farmer, gives an account of his method. He says—

"I have found that instead of striking a horizontal, it is best to cut quite a sloping stroke, splitting down from this slope, perpendicularly, so low as to admit the bud, taken off in an oval shape, in the same careful manner as above described; having as much care to preserve a little wood at the eye of the bud as I had in taking it away in the former process. The bud then is to be thrust under the raised bark, down so low as to admit the bark of the stock to come in its former place, above the bud, for half an inch, where it immediately receives its usual nourishment; being bound up with coarse woollen yarn, which I prefer to any thing else. In winding on the yarn I am careful to draw it gently over the wound, omitting to cover the bud till the last, over which I then draw the yarn very softly. In this process, every part works so natural, and so smooth, if unbound the next day it would be difficult to distinguish the bud from a natural one; and, indeed, the bud as well as the bark of the stock seems not in the least affected. In this mode of inoculating, there is no such thing as not taking. On the other hand, the bark being cut square across, and the bud not being sufficiently thrust down, the bark of the stock coming to bear on the outer bark of the bud, at top of the slit, there is nothing to support it; but it dries and shrinks from its primitive place, admits air, and if the wood is taken out of the bud, it all falls together, especially if the eye of the bud is a little rubbed; at any rate, live or die, a dangerous wound is inflicted.

LIVE STOCK IN ROSS COUNTY, OHIO.—The amount of pork put up in this county during the year is about 20,000 barrels, worth about \$10 per barrel, besides a considerable amount which was driven to the eastern markets on foot. About 3000 head of fat cattle were sold to purchasers for the eastern markets, worth about \$4.50 per hundred. There was manufactured in Ross county about 40,000 barrels of flour, worth \$3.50 per barrel. This statement refers mostly to the amount exported, and sold by our farmers and dealers in the articles above specified.

THE BLACK OR COMMON ELDER.—The virtues of the elder are but little known among us. In continental Europe it is used with success in many diseases. From Hippocrates down to the present time, we are told by the French Society of Naturalists, the elder has been employed in medicine. Every one knows,

say they, its virtues and properties; they are not equivocal, for time and experience have confirmed them.

Its flowers are resolute, anodyne and emollient. Infused and drank like tea, they provoke and establish perspiration in certain fevers, colds and catarrhs. Fried with eggs, they operate as a purge; applied as a fomentation in the erysipelas, they reduce the heat and irritation, and are excellent in all inflammations of the skin; warmed and applied to the forehead and temples, they cure the megrims. They are used in the vapor bath for swollen legs, particularly in the dropsy, in which disease the berries, inner bark and roots of this plant are used with effect as diuretics and purgatives. From the berries a rob or thick syrup is made, which is given with success in bowel complaints, particularly in the dysentery.

Its flowers give a fine perfume to vinegar, and to wine the flavor of muscat. Apples, when laid on a bed of the flowers of elder when dried, and then confined from the air, acquire an exquisite taste. A decoction of its berries dyes linen, after passing it through alum water, of a greenish brown color, and from them good brandy can be distilled.

An English farmer, in the county of Devonshire, at a season when the whole of vegetation was destroyed by caterpillars, glasshoppers and other insects, observed that the elder remained untouched, in full health and vigor. This induced him to make an experiment which was attended with perfect success. With boughs of the elder he went over his fields whipping and rubbing gently his turnips, cabbage plants, wheat, &c., which drove off all those noxious insects, and they never returned to their destructive work. The strong stinking scent of the plant destroyed the eggs of these insects. Since that time the process has been used with success on fruit trees, and all other plants when attacked by insects. Some boil the branches, leaves, &c. of the elder in water, and then sprinkle it over those plants and trees attacked by insects, which has the desired effect.

This shrub flowers in June; after picking the flowers and berries they should be dried in the sun, and then laid up in a clean place free from moisture, for medicinal purposes.

There are varieties of the common elder. Some plants have deeply indented leaves. The leaves of some are streaked with yellow, others with white, and some with yellow and white. Some bear white and others green berries. The elder is multiplied by seeds, layers, and slips. They take root rapidly when planted in slips, as do most plants having much pith.

Hedges of elder are common in some parts of Europe. They are impenetrable, of long duration, and not subject to the depredations of cattle, from their odor being very offensive to them. Sheep will sometimes eat them.

The wood of roots of the elder is used in Germany and France in making toys, sword canes, snuff boxes, fishing rods, combs, and other articles, and by cabinet-makers and turners. WM. LEE.—[N. E. Farmer.]

CORN-SHUCK MATTRESSES.—As the laudable object of the Farmers' Register is to diffuse as widely as possible the mass of knowledge which relates to domestic economy, thereby procuring for the many the comforts which are at present possessed by the few; I take peculiar pleasure in aiding the benevolent design, so far as the narrow limits of my own information extend: and so, methinks, should every matron whose experience has surmounted the perplexities of household cares. For this purpose, I have deemed it of some importance to call the attention of its readers to the use of shucks in making mattresses. I have often been surprised to find shucks so rare in families, where every convenience was at hand to make (with the most inconsiderable expense) this article of comfort and utility.

Nothing but a little management is required for every farmer's family in the state to possess

them. Independent of the comfort of mattresses in summer, I have often heard experienced physicians plead hard for their general use in this bilious climate; though common sense, I should suppose, is sufficient to discover the relaxing and debilitating effects or being nightly smothered on a feather bed, through the heat of summer; and the increased suffering produced by their use, during the prevalence of fevers, incident to our climate.

For my own part, I have often suffered painful regret, as I have looked on the sick beds of the poor, where the possession of a hair mattress would be a luxury next to an impossibility for them to obtain; but I am happy to say, that the discovery of the use of backed shucks obviates all pecuniary difficulties, in the farmer's case at least.

There are few families in Virginia, where there are not some slaves, incapacitated by age or decrepitude for active labor; and since the bright era, which introduced the cotton gin, to supersede the use of fingers in picking cotton, they are thrown out of employment altogether; or have little else to do than to sit and stupify in the chimney corner. Now, for the benefit of all parties, I would recommend that a plenty of shucks, a flax hackle or common fork, and a barrel, should be conveniently arranged for the occasional exercise of the subject's faculties, until a sufficient quantity is shredded and packed up. When you have prepared your tick, and the weather is suitable, immerse and soak the shucks well in clean water, and then spread them thin in the hot sun to dry. This will cause them to curl and acquire the elasticity of hair. Be careful after hackling every bunch, to cut off the hard ends.

These shucks stuffed in a common tick, and tacked in squares through and through, will be quite comfortable on a feather bed, where cotton cannot be afforded—but if a case is made after the mattress style, and batts of carded cotton laid at the top and bottom, of several thicknesses, and neatly tacked in squares, they may be made to equal, if not surpass any hair mattress, for you can have them as thick as you choose; and in neatness and purity of material, they will surpass, the hair, though they may not in durability. I should think it a useless or presumptuous display of my own knowledge on the subject, to describe farther the process of making mattresses, but that I was told by an intelligent young housewife, that she had no idea how they could be conveniently completed. As I shall, in such dilemmas, ever feel it a delightful task to assist the young idea, I will merely suggest, that the piece which divides the top and bottom of the mattress case should be sewed all round the bottom, and bound with tape made for the purpose. The top part should be sewed to one side of this piece only, like a lid to turn back, until the batts of corded cotton are laid on the bottom of several thicknesses, and the shucks carefully and regularly packed in.—Place the layers of cotton again over the shucks, and turn the lid over all, and bind it round like the bottom. It must be then laid on a frame, for the purpose of tacking it through and through. This will require a very long needle, which can be made at any blacksmith's shop.—A FRIEND TO COMFORT. February 20th, 1834.—[Farmers' Register.]

SHALLOW PLOUGHING.—I haul out my coarse manure and scatter it on the land, where it is most stiff and close and then use a one or two-horse turning plough to plough the manure in, but am careful not to break the land more than three or four inches deep. I then haul out my fine manure on another part of my cotton land, and let it remain in ox load heaps, till I can finish ploughing the land with the same turning plough, or a trowel hoe plough, as I may find most convenient, and then scatter the fine manure, and harrow it in with a five-tooth harrow.—[Farmers' Register.]

NEW-YORK AMERICAN.

APRIL 19—20, 1834.

LITERARY NOTICES.

THE REVIEW OF THE WEEK—which we had prepared at some length—is of stern necessity, excluded to-day—and we fear, such is the aspect of public affairs; until next Saturday.

SUMMARY.

[From the Salem Gazette.]

Mr. Benjamin Gile, of Danvers, whose name will be found in our list of deaths, was a man of a vigorous and independent mind, and of extensive information. Books were the chief source of his happiness through life. In his youth he served several campaigns in the Army of the Revolution; during the siege of Rhode Island in 1778 he served in a company commanded by his father, Capt. Ezekiel Gile, of Plaistow, in Col. Peabody's New Hampshire Regiment.

His Pension Certificate was received from the War Department on the day of his death—but for a part of his services. He served six months as a substitute for a man named Davis; for this service the Pension agent refused to allow the pension, because Davis's name was kept on the Rolls, instead of Gile's, though Davis himself, and several others, swore that Davis *did not*, and that Gile *did* serve during all that period,—thus affording an example how Truth and Justice are often baffled and defeated by artificial and technical jargon! In a battle during that campaign the two Lieutenants of the Company were killed by his side, Lieut. Dearborn by a cannon shot, and Lieut. Cobb by a musket ball through his heart,—yet the official rules of evidence have made it out that Mr. G. was not exposed to danger during that campaign.

FOREIGN EXTRACTS.—The press and importance of domestic affairs have absorbed all attention and all interest so much recently, that we have found little room for any items from foreign countries. We present today, however, two or three extracts from London papers somewhat curious.

The first is from the Times of 26th February, and is an exposition that really would seem hardly credible, but for the undoubted facts on which it is founded, of the open and extensive corruption of an English election—that of Liverpool.

[From the Times.]

The published evidence, taken before successive committees of the House of Commons in 1831, in 1832, in 1833, and more lately that obtained by the Commissioners of Municipal Inquiry, sufficiently establish these facts, and must dissipate all doubts on the subject, either now or hereafter. It is proved in these documents that the elections both of the magistrates and members of Parliament for the borough have, on several occasions of late, been influenced by the grossest pecuniary corruption and the most prodigal use of treating; that at the contest for the mayoralty in 1827, one of the candidates expended between £7,000 and £8,000, and the other about £12,000; that votes which were sold at 6s. each at the commencement, rose in market price to £12 and even £20, before the conclusion of the struggle; that after the second day, every working freeman who voted on the other side received a bribe; and that they attended the pay-room in crowds to receive their money, as the operatives of a factory to receive their week's wages. It is established likewise on the most irresistible evidence, that in the grander political contest of November, 1830, between Mr. Denison and Mr. Ewart, for the seat in Parliament, vacant by the death of Mr. Huskisson, each of the candidates expended upwards of £40,000!! It is stated by one of the witnesses who audited Mr. Denison's accounts, that the expenditure on the part of that gentleman amounted to £44,000, after deducting £3,000 from publicans' bills, which the Committee disallowed; and a witness from Mr. Ewart's committee admitted that though £34,000 passed through his hands, that sum did not include the whole of Mr. Ewart's expenses.

On this occasion likewise votes rose in price as the contest advanced, and towards its conclusion a single vote was sold for £80!! Nearly every freeman who came to the poll was bribed. The tickets given for enabling parties to claim payment from Mr. Denison's committee amounted to about 2,000; and one of the witnesses having obtained these tickets, copied from them into a poll-book against the name of each voter the sum which had been paid him. The fol-

lowing is the analysis of the list of the other candidate, Mr. Ewart's voters, with their respective prices, as drawn up by his own law agent:

600 freemen received	£10 and under
462	between 10 and 20
209	20 and 30
24	30 and 40
7	40 and 50
1	60

1,303

One circumstance which disgracefully distinguished the bribery practised on these two occasions from almost every other, was the open, fearless, and shameless manner in which it was conducted. The respective parties advertised for supporters, and announced the price which they were ready to give for votes on the walls of their committee rooms. Tickets or tally-papers were openly distributed, which were as regularly paid. The ingenious conductors of the election had thus the merit of systematizing corruption—of making the sale of consciences a counting-house affair, and of erecting regular banks of bribery, with the proper assortment of promissory-notes or poll-tickets, and bags of gold, with cashiers, examiners, and controllers of accounts!!

Another most striking and most melancholy characteristic of the contest was, not only the universality of the corruption among the poorer freemen, but the height to which the tide rose among persons in better circumstances, whom, but for the levelling nature of the system, and the gradual decay of the moral sense which it produces, the infamy ought not to have reached. It was mentioned by the Treasurer of Mr. Ewart's committee, that several "respectable" persons received large sums of money. A retired brewer demanded £50; a captain in the militia received 35l.; three brothers, "respectable men," were paid 30l. a piece; a druggist and his father, "both respectable men," received each 20l.; and a "respectable man," worth 10,000l., as he came early in the contest, was satisfied to pocket the paltry sum of 12l.!

A third revolting feature in these disgraceful transactions was, that some of the freemen, after promising their votes to one side, and taking its bribe, broke their infamous compact by incurring the additional infamy of accepting the money and supporting the cause of the other. The system of corruption and profligacy which distinguished these contests was so disgusting, that the Grand Jury of the borough presented it as a nuisance to the Town Council, whom they invited to abate it.

Now, such are the freemen or burgesses whom it is proposed to disfranchise—such is the system which it is proposed to destroy. It is in evidence that 2,661 of these burgesses received bribes in 1830; that nearly 2000 of the same persons still remain on the register entitled to vote; and it is well known, that though all householders, paying a rent of 10l. or upwards, are entitled to share with such corrupt men in electing their Parliamentary representatives, yet that the latter enjoy exclusively the power of electing the chief magistrate and bailiffs of the borough. The whole number of these old burgesses now resident does not probably much exceed the roll of those against whom corruption was proved, if we deduct from the former such respectable voters as never received a bribe, and who would compose a part of the new constituency in whatever manner it were modified. That the number of voters in Liverpool would not become inadequately low for every purpose of independent action, even though the comparatively small body of freemen who cannot rent a house at 10l. value were struck off the list, will readily be admitted when it is considered that nearly 8,000 householders are already registered under the Reform Act, and that the number is constantly increasing.

The next, item is from a debate on the army estimates in the House of Commons. It is curious mainly from the speech of Cobbett.

Army Estimates.

Mr. Ellice thought it unnecessary, after the discussion which took place on Friday evening last, on the subject of these estimates, and after the house had voted the numbers of the effective service, to do more than put the first vote into the hands of the chairman. At the same time he should be very ready to answer any question which might be put to him respecting the various items, in order that they might be fully and clearly understood. The right hon. gentleman then moved the first vote,—“That a sum not exceeding 3,056,873l. 18s. 11d. be granted to defray the charges of His Majesty's land forces, for

service at home and abroad (except the regiments employed in the territorial possessions of the East India Company).

Mr. Cobbett offered no objection to the numbers of the army, because he was quite certain that 50,000,000l. of taxes could not be collected in gold without a standing army of 90,000 or 100,000 men. He felt it however, his duty to offer some objection to the pay of the army. The lowest private soldier received 7s. 7d. a week, exclusive of meat, bread, coal, and candles, and a sum of 68,000l. was expended to supply him with small beer, or something in lieu thereof. But the sum received by the soldier was not so objectionable in itself as it appeared on comparison with the amount of wages received by laborers in the country. An hon. baronet, who accused him of exciting the people to acts of incendiarism, had in a letter to the poor law commissioners stated that the farmers had, in consequence of the fires, raised the laborers' wages from 3s. 9d. to 5s. a week. The hon. baronet had also stated that the farmers grumbled greatly at the rise which had taken place in wages, leaving it to be fairly inferred that he considered 5s. a week too much money to be given to a laborer for his week's work. Would that hon. baronet consent to vote 7s. 7d. a week to the soldier, and at the same time tell the laborer that he was paid too highly if he received 6s. 7d. But in estimating the soldier's pay at 7s. 7d. per week, he was confident that he underrated the amount. He believed it it would be found, one thing with another, to be equal to 1s. 6d. a day. “But,” said the right hon. secretary, “the pay which the soldier received was not too much, considering the hardships and fatigues he was obliged to endure; he was continually changing his quarters—at one time broiling under a burning sun, and at another frost-bitten by cold.” The right hon. secretary was a very wise, sincere, able, and honest man, no doubt (general cries of “Hear, hear,”) but the right hon. secretary knew nothing about what he was talking of, (laughter—not so much as the youngest of his children, who was now probably in the cradle. (More laughter.) He (Mr. Cobbett) did know something of this matter from experience. He had not been under a broiling sun, it was true, but he had been at least as cold a region as any to which British troops were sent, and had remained there 7 years together. “I happen to know,” continued the hon. member, what so rt of life we led there; and if ever there was a pleasant life, ours was one.

Our summers were passed in fishing, shooting wild pigeons, rambling about the woods, and visiting the dwellings of the Yankee girls. (Laughter.) In winter our time was spent in skating on the river, walking about in snow shoes, or sitting before an excellent fire, singing, laughing, and drinking rum at 7d. per quart. (Laughter.) We had 7lb. of flour per week, 4lb. of the best meat, 6oz. of butter, a quart of peas, and a quart of rice—a greater allowance than falls to the lot of any two laborers in England.” He thought, after this statement, that the House would not be of opinion that the condition of British troops abroad was very arduous. However, as a bargain had been made with the soldiers for the present year, he would not propose that it should be broken, though he would oppose its renewal. “But,” asked the right hon. Secretary, “how can the soldiers be got rid of?” What, then, were they Janissaries? Could not his present majesty get rid of them as easily as the late King got rid of Sir Robert Wilson? What he objected to was the amount of pay given to the soldiers; while the laboring people of this country were so poorly remunerated for their work. He was afraid that the laborers, badly off as they were, had no chance of seeing their condition bettered, for he found it proposed by the poor law commissioners that they should be shut up in a sort of Bastille. But what else was to be expected from a report, the joint work of bishops, lawyers, and newspaper reporters? The hon. member concluded by saying that he should propose no amendment, as he understood a contract had been made for the present year, which must in fairness towards the soldiers be fulfilled.

Sir H. Hardinge had heard the hon. member for Oldham's speech with great astonishment. He did not think that the hon. member, who had once the honor of belonging to the army, would introduce topics calculated to lower the credit and character of the soldier. (Hear, hear.) He (Sir H. Hardinge) would show to the house that the British soldier received, at the present moment, smaller allowances than any other class but one of his Majesty's subjects. The report of the poor law commissioners distinctly stated that the soldier was ill-paid, as compared with other classes of his Majesty's subjects; and it further appeared from the same

document that the soldiers' was only brown bread, and that the convicts, who were supplied with white bread, held it up before the eyes of the soldiers' asking them, in derision, how they liked their "Brown Tommy." He (Sir H. Hardinge) was ready to admit that, under existing circumstances, the soldier was sufficiently paid, but he was sure the house would not think that he was overpaid. (Hear, hear.) A pauper's family was better maintained by the country than a soldier's. In very few poor-houses indeed was any distinction made between the diet of females and males, of children and adults; while in the army, the women were allowed only half the rations given to the men, and the children half of that given to the females. It appeared also from a scale of the comparative comfort enjoyed by different classes of his Majesty's subjects, given in the report of the commissioners, that the soldier was the worst off almost of all. The lowest in the scale was the independent agricultural laborer; just above him was the soldier; then came the able-bodied pauper; next the suspected thief; then the convicted thief; and the highest in the scale—he who enjoyed the greatest degree of comfort—was the transported felon. He was ready to admit that the state of despondency into which a convict was likely to fall rendered it necessary, perhaps, to give him a greater quantity of food than was supplied to the other persons in the scale; but the point he was contending to establish was, that, in reality, the soldier was worse off than a person guilty of crime, and sentenced to transportation. (Hear, hear.) He therefore trusted that no reduction would be tolerated in the soldier's pay.

The next, is the report of a case of forgery; the delinquent in which, it appears, had taken refuge in this country, was tracked, followed, taken back and convicted.

SATURDAY, MARCH 8.

Forgery.—*The King v. Edmund Campbell Brewer.* The prisoner was indicted for the forgery of a bill of exchange for 13l. 5s. with intent to defraud the Stourbridge Canal Company. There were other counts stating different intents.

Mr. Whately, Mr. Godson, and Mr. Scott conducted the prosecution, and Mr. Carrington and Mr. Lee defended him.

John Perry, examined by Mr. Godson.—I am an ironmonger at Stourbridge. The Stourbridge Canal Company owed me 11l. 14s. 10 1/2d. The prisoner was their agent. I applied to him at the end of last July for my account. He came to my house, and brought a bill drawn for 13l. 5s. to pay that account, and to pay the balance on his own private account.—There was an endorsement "Richard Smith—per proc. of Stourbridge Canal Company. E. C. Brewer." I paid away the bill. It came back dishonored on the 22d of October, and I sent it to the Canal Company's agent, Morris. (The bill was read. It was a bill dated the 25th of August, for two months, payable to Richard Smith or bearer, drawn by William Jones upon Messrs. Hanburs & Co., bankers, London.)

Cross-examined by Mr. Lee.—I had not received bills from the company that year.

Thomas Morris examined by Mr. Scott.—I have audited the account of the company. Prisoner came into their service in August, 1831. I occasionally audited his accounts. It was his duty to settle the accounts of the company. In September last I was about to audit his accounts, and prisoner sent me a note, stating that he had had permission to go out of town for a day or two, and should return on Tuesday, and would take all blame at the committee at his (witness's) not being ready. It was dated Sunday evening. He never returned into the service of the company, but absconded. I know the prisoner's hand writing. I believe the whole bill to be in his hand writing, and the endorsements also.

Cross-examined.—The endorsement is different from the face of the bill, but I believe it to be his hand writing.

Henry Eberhart, clerk to Messrs. Roberts, attorneys at Stourbridge, pursued the prisoner to Liverpool, and then embarked for America. Arrived at New York, and from inquiries found him at Utica, 300 miles up the country. There he was apprehended and carried before a magistrate, whence he was brought back to England, and delivered to the constable. After he was brought back to England, and was at Stourbridge, I asked the prisoner who was Richard Smith, the endorser. He hesitated for some time, and then said, "He is a friend of mine, and gave me the money to take it up." I asked him where he lived, and told him that if he had paid the money, Smith could not be hurt. He said "Yes, he

may." I asked him who was Jones, and said the whole bill was in his handwriting. He said "yes." After a little pause, he said "I knew I should be prosecuted on this bill, but having found myself involved, I uttered it, and stopped." He said he had paid it to Mr. Perry.

Cross-examined.—I had no power with me to bring him back from America. He came back voluntarily with me. He was at liberty afterwards, and during the voyage.

Craig, the constable, on the 27th of November last, received prisoner into his custody, and the prisoner told him the same story as to the last witness. He said it was drawn by Smith, but the names were fictitious, and asked if the crime was the same as if the names were known. The witness said he did not know. Prisoner said the last word he said when he left England was, he wished them to take up the bill. On the 29th, he wrote a note to Mr. Payne, requesting him to inquire as to that same question of Mr. Grazebrook, or some other attorney. This note was kept by Craig the constable.

It was proved that no person of the name of W. Jones, near Birmingham, banked at Hambury's, and that the person of the name of Smith was not known there.

The prisoner, a respectable young man, declined saying anything.

Mr. Whately, for the prosecution, stated that the prisoner had borne an excellent character, and had filled a place of great credit for many years.

Mr. Justice Parke summed up the case to the jury, who found the prisoner GUILTY. Sentenced to be transported for life.

The following is the plan of the Federal Constitution of Switzerland, which was to be presented to the Assembly of the Zofing, on the 26th February.—It is divided into two parts—general principles and special provisions. Among the general principles, the most important is that which declares the sovereignty of the nation. Paragraph 8 declares the Swiss territory to be one and indivisible, and stipulates a complete equality of rights for all the inhabitants. The liberty of the Press and the freedom of discussion, are acknowledged without any restrictions. The first part of the compact, which comprises the general principle in 12 paragraphs, can never be altered. Among the special provisions, we observe by paragraph 13 the nation is divided into tribes, and the country into cantons. Paragraph 14 is in the following terms:

"The Executive of the Federal Constitution is entrusted to a Diet, the members of which are to be elected by the tribes in the proportion of the amount of their population.—Paragraph 17. The tribes of Switzerland are to contribute in proportion to their resources to the support and the expenses of the State.—Paragraph 18. The Confederation will establish at its own charges such patriotic institutions as the tribes of themselves are enabled to establish.—Paragraph 19. The tribes will have the right of giving themselves special Constitutions, but on the express condition that they are not at variance with the general Federal Constitution."—[National Gazette.]

"*Scenes from the Life of Edward Lascelles, Gent.*—Whatever investigations the captain had instituted with regard to the individual with whom the fire had originated, the result was totally unknown, except to the parties concerned. That due inquiry had been made, we all felt quite assured; for the crime was one of a very serious nature, and not likely to be overlooked by so strict a disciplinarian as Captain Morley. Nay, when the systematic arrangement of every thing on board, and the correct information the captain usually had of what passed in the ship, was considered, it seemed extremely probable that the guilty person had been detected. It was not, therefore, matter of astonishment to myself, or any one else, when at six bells in the forenoon, all hands were turned up for punishment. In the fore-part of the quarter-deck stood Captain Morley, dressed in full uniform, holding a folded paper in his hand, apparently the articles of war. Near him were the different officers, in cocked-hats and side-arms; and a little farther removed, the men.—All was now anxiety as to the culprit; and there was a general murmur of regret and surprise when Richard Elkins, the boatswain's yeoman, was called forward and committed to the custody of the master-at-arms. If there was one man on board the *Hesperus* a greater and more general favorite than another, it was Elkins. Civil and obliging to his superiors, kind and friendly to his equals, an excellent seaman, and always ready at the call of duty, he was respected and beloved both by officers and men.—

During the war he had been engaged in the hottest of the fray, and bore many honorable wounds in testimony of his gallantry. Repeatedly had he led the van of his comrades in boarding the enemy; twice had he, by his prowess, and at great personal risk, saved the life of an officer; and on one occasion he swam to the Admiral with despatches when the iron shower of balls and grape fell so thick that no boat could be trusted on the water.

The captain, having read before an uncovered audience the clause in the articles of war which related to the crime, folded up the paper, and with a tone of deep emotion addressed the unhappy man nearly in these words:

"Richard Elkins! through your carelessness yesterday the ship was nearly destroyed by fire; and your shipmates have only been saved from the most dreadful of deaths, by the merciful intercession of that Being before whose awful throne you had nearly hurried them. You have broken the articles of war, having, in direct opposition to orders, removed a lighted candle from the lantern in which it was placed for safety, and fastening it to a beam, left it burning in that situation when you went to supper, (four o'clock, p. m.) In consequence of this act of disobedience and neglect on your part, the fire broke out in the boatswain's store-room. Is this the case, sir, or is it not?"

"It is, sir!"

"I therefore consider it my duty to punish you, as an example to the rest of the crew; and much do I regret that one who is in every respect so deserving a man should have incurred so severe a penalty.—Strip, sir!"

Without a syllable in his own defence, or a single plea for mercy, he took off his coat and shirt, and his brawny wrists were tied to the gratings. One only appeal he made, but not in words; it was merely an expressive glance of his eye, by which he seemed to request the intercession of his officers and comrades. The benevolent commander marked that glance, and it was reflected back from his own countenance, as if he wished to second the appeal. But in vain; no one spoke, for all knew that the offence was too heinous to be forgiven.

The boatswain had taken off his coat, preparatory to giving the first dozen—the cat was ready in his hand—the stiff figure of the master-at-arms stood by, prepared to record the stripes, and the captain paced to and fro upon the deck, chucking into the air a small bunch of keys—his common practice when he was agitated. After making several turns of the quarter-deck, he at length stopped, and every one expected that he was about to give the signal to commence.—For a moment he stood gazing on the culprit: it was an interval of the most anxious suspense, and all eyes were eagerly fixed on him. At last, turning towards the boatswain, he raised his hand gently upwards, and gave the unexpected order—"Cast him off!" (unbind him.) In an instant the bonds fell from the poor fellow's arms, and he stood, unshackled and undisgraced, among his comrades.

"Elkins!" said the captain, "I cannot flog you; it is not twenty-four hours since God forgave us all; it is meet that I should now forgive you. Pipe down, Mr. Parsons!"

Three rounds of such hearty cheers, as made the timbers of the *Old Hesperus* ring again, succeeded this short, but truly eloquent address; and I believe I was not the only one on board who envied our noble-minded commander the grateful applause of the seer within his own breast—an applause which, certainly, he must have that day experienced.

The *Instituteur*, a journal of primary instruction presents the following general results of elementary instruction in the departments:—The number of children of both sexes who learn to read is nearly 2,000,000. But almost half the communes of France refuse to tax themselves voluntarily to assist the Government in spreading the blessings of popular instruction:—

Number of Schools.	
Elementary Primary	35,007
Superior Primary	373
Private	9,092

Total 44,472

Number of Pupils who frequent the Schools.

Boys	1,175,248
Girls	731,773

Total 1,907,021

Total expense of primary instruction, 10,172,706*fr.* 19*c.*; portion of this expense paid by the communes, 7,693,793*fr.* 50*c.*; ditto by the departments, 2,054,051*fr.* 41*c.* Number of communes taxed *ex officio* 19,032. Amount of the taxes, 1,994,319*fr.* 60*c.*

The unparalleled enterprise of the Yankees is manifested in every quarter of the world. The Governor General of India, Lord William Bentinck, has presented Mr. Rogers, supercargo of the ship *Tuscan*, with a handsome Silver Vase, bearing the following inscription:

"Presented by Lord William Bentinck, Governor General and Commander in Chief of India, to Mr. Rogers, of Boston, in acknowledgment of the spirit and enterprise, which projected and successfully executed the first attempt to import a cargo of American Ice into Calcutta."

The Vase is of a chaste and classic form, ornamented with flowers and fruit, intersected with foliage, and richly embossed.

Banks of Alexandria.—The Directors of the two banks which remain in Alexandria, viz: the Bank of Potomac and the Farmers' Bank, have announced that they will hold themselves personally responsible for the debts of those institutions respectively. The run upon them had ceased and the panic in a great measure subsided.

[From the Norfolk Beacon.]

THE PROSPECTS OF THE CROPS—GLOOMY INDEED!—We continue to receive the most depressing accounts of the prospects of the coming crops, produced by the flooding of the low grounds by the late unexampled heavy rains. We learn from Farmers in the vicinity, that those who have planted corn in their low grounds, had it entirely drowned, and that where they have not planted, the ground continues so soaked as to prevent its being prepared for that operation. A respectable gentleman who has recently passed through several of the proximate Counties of N. Carolina, states that there also the prospects for the corn crops are quite disheartening.

The New Orleans Courier of 2d April, notifies, under some of the most respectable signatures of the city, a public meeting to convene for the adoption of measures, to give to the tragedian, Cooper, a benefit on the plan of that given to him in this city.

THE POLES.—At a meeting held, in pursuance of a public notice; at the Merchants' Exchange, on Saturday, the 19th of April, Abraham Ogden, was appointed Chairman, and Wm. B. Townsend, was appointed Secretary.

Resolved, That Albert Gallatin, Wm. B. Townsend, Theodore Dwight, James G. King, William W. Woolsey, S. V. S. Wilder, Pela. Perit, Moses H. Grinnell, be appointed a Committee for the purpose of collecting subscriptions here and elsewhere, and of distributing the same, for the relief of such exiles from Poland, as have been, or may be, landed in this city, and to devise such other means as may be needful for the purpose of carrying into effect, the benevolent views of the subscribers to the Polish Fund.

On motion, Resolved, That William W. Woolsey be appointed Treasurer of the Polish Fund, to whom all donations may be paid. A. M. OGDEN, Chairman.

Wm. B. Townsend, Secretary. The papers in this and other cities are requested to publish the above proceedings.

The ship *St. Andrew* was safely and beautifully launched this morning, about 9 o'clock. She will take her place in June, as a Liverpool packet, under the command of Captain Taubman.

Shipwreck.—The schooner *Diluvian*, (late) Green, master, from Baltimore bound to Charleston, when 15 or 20 days out, encountered a heavy gale in the Gulf Stream, during which Capt. Green was washed overboard and lost—both pumps choked, and the vessel having filled with water, the crew, with the assistance of Mr. Harrison, a passenger, by great exertions kept her before the wind and made for the land, which they fortunately reached about 15 miles to the southward of Cape Henry, on Friday night last, where they put the vessel on shore. The cargo consisted of corn, whiskey, coffee and flour, which has been mostly saved, though in a damaged state, and has been turned over to the Commissioners of wrecks. The vessel, we learn, may possibly be got off.—[Norfolk Herald, 16th April.]

WILKESBARR, (Pa.) 16th APRIL.—*Reward of Chivalry.*—A young hero by the name of Horace Williams was sentenced during our present session of Court to one year's imprisonment in the penitentiary and to pay a fine of \$500 for challenging to a duel. We believe this is the first conviction of the kind in

this county, and trust it will operate as a warning to others. A few such examples in different parts of the United States would effectually exterminate this despicable practice.

NORFOLK, April 16th, 1834.—*Arrival of the U. S. schr. Enterprise.*—The U. S. schr *Enterprise*, Lt. Com. DOWNING, 37 days from Rio Janeiro, arrived at the Naval anchorage this morning. Officers and crew all well.

The U. S. ship *Peacock*, Capt. GEISINGER, and schr *Boxer*, Lt. Com. FARRAULT, were at Rio 8th March, all well—the former waiting the arrival of the *Natchez*—the latter repairing.

The U. S. ship *Ontario*, Capt. SALTER, had sailed for the River La Plata.

The U. S. ship *Natchez*, Capt. ZANTZINGER, bearing the broad pendant of Com. WOOLSEY, was daily looked for at Rio from Montevideo.

The U. S. ship *Lexington*, Capt. McKEEVER, sailed for Portsmouth, N. H. 8 days previous to the sailing of the *Enterprise*.

Lieut. Com. WILLIAM F. SHIELDS, late Commander of the *Boxer*, and Midshipman WILLIAM H. BROWN, late acting sailing master of the *Peacock*, (for his examination) came passengers in the *Enterprise*. The E. left at Rio, several American vessels, among which were Ships *Extio*, Walker, for New York, in 10 days, and Brig *Sabra*, Winslow, for Richmond, in 7 do. The Brig *Barbary*, Brown, after being 10 days out, bound to Antwerp, had put back leaky. No news at Rio—Markets looking up.

List of Officers of the Enterprise.

SAMUEL W. DOWNING, Lieut. Commanding.
Timothy B. Benham, 1st Lieut.
James M. Watson, 2d do.
George Blacknal, Asst. Surgeon.
William P. Zantzinger, Purser.
Alexander C. Maury, Act'g Master.
Richard Forrest, Mid'n
Thomas T. Hunter, do.
Levin Handy, do.
Alex'r M. Pennoek, do.
John D'Camp, do.
John Mooney, do.
William P. Milnor, do.
Charles Fales, Gunner.
Edward Harrison, Act'g Boatswain.
Charles B. Wright, Purser's Steward.

COMMERCIAL RECORD.

REVIEW OF THE NEW-YORK MARKET, APRIL 19.
ASHES.—The transactions have been limited until the close of business yesterday, when about 80 bbls. fresh inspected Pots were sold at \$4.25.

CLOVERSEED.—Small sales of good quality were made yesterday at 64 cents.

COAL.—A cargo of 190 tons Liverpool Orrel was sold at \$3.75, on time. A good deal of Anthracite lies over.

COCOA.—250 bags Para sold at 5 cts., 4 mos.

COFFEE.—There has been quite an active demand since our last report, and the sales amount to about 6000 bags—embracing about 1060 St. Domingo at 104 cents, to 11 cents on time; 140 bags old crop Brazil, 104 a 104 1/2 cents; 250 new crop, 11 1/2 a 12; 5 a 600 Laguna, 11 1/2 a 11 3/4; 100 good Porto Rico, 12; some Cuba, 10 a 10 1/2; Manilla, 12 1/2; Java, 10; a large parcel of Sumatra at a price not transpired; and, by auction, 545 bags old crop Brazil, 104 cents, 4 mos., and 68 bags Cuba, good, 11 1/2 a 11 3/4 cents, 3 and 4 mos. The transactions have been both for home use and export, and the stock is very much reduced.

COPPER.—Sales of Sheathing have been made at 2 3/4 cents.

COTTON.—Prices are fully maintained, and in consequence of the limited supply, an advance has in some instances been realized. The sales of the week amount to 1900. Stock on hand only 13,664 bales of all sorts.

Imports here—from
New Orleans.....30
Florida.....103
Alabama.....763
South Carolina.....327
North Carolina.....184

Total.....1407 bales.
Total Import, since 1st inst.....6206 bales.
Export, from 1st to 17th inst.....6979 bales.

DOMESTIC GOODS.—There is a fair business doing.

FISH.—Now, 1 and 2 Mackerel have advanced 25 cents per barrel.

FLAXSEED.—We have no sales to report.

FLOUR AND MEAL.—A fair but not very extensive business has been done in Flour, and without any further advance in prices.

FURS.—A large quantity of articles under this head have been offered at auction by the American Fur Co. and others. Only a small proportion of which were sold, and others not being satisfactory.

GRAIN.—We have no arrivals of Wheat, of which the market is quite bare. Rye and Corn continue in demand at improving prices. No Southern in market. Oats remain as before.

HIDES.—The demand is more active.

HOPS.—We have heard of no sales. The article is extremely dull.

LEAD.—Several sales of New-Orleans Pig have been made this week at 5 1/2 cts. 6 mos., which is a reduction of 1/4 of a cent.

LEATHER.—Some considerable sales have been effected of Sole this week, by auction, at an improvement of 1/4 a 1/2 a cent on the previous transactions.

MOLASSES.—The supplies of late have been hardly equal to the demand.

OILS.—There has been an active demand of Whale Oil, for export, and pretty extensive sales have been made at 26 cents, which is an improvement.

RICE.—There have been no sales of any importance since our last report.

SKINS.—The American Fur Co. sold, by auction, 466 Shaved Deerskins at 40 cents per lb.; 122 Red and Blue, 35 cts.; and 256 Gray, 25 cents, 5 mos.; 208 Bear Skins, 75 cents, and 169 Cubs, 50 cents each.

SUGARS.—There is a very active demand, and the stock of all descriptions is reduced quite low.

TEAS.—The cargo of the brig *Nabob*, consisting of about 4000 packages, was sold on the 17th, and went off with some degree of firmness, at rates about equal to the previous sales.

WHALEBONE.—A large sale was made at 17 cents, which establishes an advance.

WOOL.—12 bales Saxony Lambs were sold, by auction, yesterday, at 10 1/2 a 100 cents per lb., 4 and 6 mos.

FREIGHTS.—To Liverpool continue dull. To Havre, the packets are readily filled at our rates.

PHILADELPHIA MARKET—Week ending April 19.

COTTON.—The stock is still very light, and only small parcels selling; the present supply does not exceed 150 bales.

DRUGS AND DYES.—A large parcel was sold by auction his week, at very low prices; some articles were forced off to close accounts.

DRY GOODS.—Continue to decline in value.

FEATHERS.—Western at 37 1/2 a 38c.

FISH.—No extensive sales of any description; our quotations designate value. No. 3 Mackerel are scarce.

FLOUR AND MEAL.—We have to advise a still further advance in almost all descriptions.

HOPS.—Different sorts, selling at 15 a 18c.

OILS.—A further advance in Lined Oil.

PROVISIONS.—150 bbls New York prime Beef, \$6 50; 300 kegs Western Lard, 8 a 8 1/2c; 4 mos; 113 do, 7 1/2c, cash; 70 do, Jersey, 9 1/2c; 600 western Hams, 9c; 10 hbls do, 8 1/2c; 60 bbls cargo Pork, \$2 1/2; 30 do Mow, 134; 25 kegs butter, 8c.

RICE.—45 casks \$3 1/2 a 3c.

SEEDS.—Flax seed is worth \$1 25 a 1 30, and Clover, \$3 50—little doing in either.

WOOL.—Considerable demand in Pulled and Fleeced, at quotations, 5 bales washed western, a 33c, on Thursday.

BALTIMORE MARKET—April 22.

A little more animation in the Coffee market; 14 1/2c was offered for 400 bags St. Domingo, which offer was declined; it freely brings 11 cts. There is no alteration in prices of Tea; the groceries are well supplied; a cargo daily expected from Canton Virginia Cotton is scarce, and would readily command 12 a 12 1/2c. Rice continues very dull.

The Banks improve in their discounts. Large quantities of Specie that was drawn out during the great excitement have been returned, and we hope soon to see confidence restored, particularly towards country banks.

FLOUR.—There is very little change since our last.

GRAIN.—No arrivals of wheat since our last report.

CHARLESTON MARKET, April 15.

COTTON.—The sales in Uplands were to a fair extent on Monday and Tuesday, at the full prices of last week. Yesterday later advices having been received from Liverpool via Savannah, of a further decline, purchasers held back until holders succeeded to a small reduction, when they again came freely into market.

RICE.—During the first two days of this week, the market exhibited its usual dullness. Yesterday fair sales were made of all descriptions, some lots of very prime and choice were disposed of at \$2 75 and \$2 87 1/2.

SUGARS.—A lot of hbls. New Orleans was offered at auction yesterday on landing.

SAVANNAH, April 12.—**COTTON.**—During the early part of the week, the demand for Upland was moderate. The sales of the week amount to about 3,500 bales. We quote 10 a 12 1/2 and 12 1/2 a 13 for choice. In Sea Island there has been considerable done, particularly in the common qualities at an advance of from 1 to 2 cents on last week's prices. We quote 24 a 30, and upwards for choice.

FLOUR.—Is selling at our quotations, \$5 a \$6.

CORN.—Is retailing at 75 a 80 cents.

FREIGHTS.—To Liverpool, 1d. To Havre, no vessel. To New York, \$1 per bale. To Providence, \$1 1/2 per bale.

MACON, April 10.—**COTTON.**—Extreme prices 8 to 10 cents; principal sales 9 1/2 to 10 cents. Freight to Savannah, \$2 per bale.

MOBILE MARKET, APRIL 5.

COTTON.—The receipts since our last review are 5300 bales,—the exports 5650.

The demand for cotton during the week has been moderate. Good and fine qualities are scarce.

Wholesale Prices.

CORR.—Sales to a fair extent have been made during the week at 13 1/2 a 13 3/4 for prime; inferior, dull at 11 1/2 a 12.

SUGAR.—The small quantity in market sells freely at 8c for prime.

FLOUR.—Import 75 bbls. No transactions have come under our observations.

CORN.—By the barrel \$1.50; in sacks \$1.50 a \$1.62 1/2.

OATS.—Per barrel \$1.00; in sacks \$1.50 a \$1.53 1/2.

RICE.—A small quantity has been received this week, which is held at higher rates.

MOBILE, April 4.—**COTTON.**—Sales of this article have not been so brisk, and the demand not as active for the last two days as at the close of last week. The receipts this week amount to 6506 bales quote—choice, 12 a 12 1/2; good, 11 1/2 a 11 3/4; good fair, 10 1/2 a 11; fair, 10 a 10 1/2; middling, 9 1/2 a 9 3/4; ordinary, 9 a 9 1/2.—[Mercantile Advertiser.]

FROM BENJAMIN LEVY'S NEW ORLEANS PRICE CURRENT OF April 5.

COTTON.—The market was steady in the commencement of the week, but the sales of Thursday were at a decline of half a cent. This decline is attributable, in part, to late news from Liverpool, which has been of rather an unfavorable character. We have consulted with those well acquainted with the market, and have concluded to make no alterations this week; but they all agree in saying they are extreme prices, and could not, at this moment be obtained, unless for parcels of the very best description.

Liverpool Classification.

Ordinary.....	9 1/2 a 9 3/4	} good demand.
Middling.....	10 a 10 1/2	
Fair.....	11 1/2 a 12	
Good fair.....	12 1/2 a 13	
Good and fine.....	13 1/2 a 14	

Stock on hand.....Bales 105451
SUGAR.—The demand is not as good as formerly.
MOLASSES.—Former rates remain without change, and the demand continues fair at 30 a 21 cents per gallon.
TOBACCO.—The former good demand still continues, and we quote as heretofore 3, 4, and 5 cents per lb.
Stock on hand.....Hhds. 3167
FLOUR.—Like almost every other article of produce, has still further declined in price—the market is overstocked.
CORN.—In the ear, is selling on the Levee at 75 a 87½ cents per bu. The supply is shelled, in sacks, is small.
COFFEE.—Fine Havana green is scarce and in good demand. Quotation 1 cent. St. Domingo of good quality, is scarce and in fair demand. We now quote fine Havana green at 12½ a 13½, Rio 114 a 12½, St. Domingo 10 a 11 cents per lb.
LEAD.—There is a reduction in the price of this article.
FREIGHTS.—We make no alteration in the rates of Freight this week, but merely remark they are dull.

NOW READY,

AN INTERESTING AND USEFUL MAP.

Upon which is delineated nearly all the Railroads now chartered in the U. States. It is designed to show the present contemplated connexion of the different lines, as well as where others may hereafter be constructed to connect with them. It may be had either in sheets, price \$1 25, or put up in morocco for pocket maps, price \$1 50, or on rollers at \$2 25, in any quantity, by applying to the subscriber.
D. K. MINOR, 35 Wall street.
New-York, April 2, 1835.

TO CIVIL ENGINEERS.

The Western Railroad Company, incorporated by an act of the General Assembly of the State of Tennessee, for the purpose of constructing a Railroad from the town of Jackson, in the county of Madison, by the most practicable route to the Mississippi river, wish to employ one or more persons as engineers to survey the route and superintend the location and construction of said road. Gentlemen who wish employment in the above capacity, will forward to the undersigned on or before the 3d day of June next, the terms upon which they are willing to engage, also the most unquestionable testimonials of good character and scientific and practical skill in works of the above description. An election of an engineer will not take place before the 3d of June.

By order of the Pres't & Directors.

JOS. H. TALBOT, Cash'r & Sec.
Jackson, March 18, 1834.

LOCOMOTIVE ENGINES.

THE AMERICAN STEAM CARRIAGE COMPANY, OF PHILADELPHIA, respectfully inform the public, and especially Railroad and Transportation Companies, that they have become sole proprietors of certain improvements in the construction of Locomotive Engines, and other railway carriages, secured to Col. Stephen H. Long, of the United States Engineers, by letters patent from the United States, and that they are prepared to execute any orders for the construction of Locomotive Engines, Tenders, &c. with which they may be favored, and pledge themselves to a punctual compliance with any engagements they may make in reference to this line of business.

They have already in their possession the requisite apparatus for the construction of three classes of engines, viz. engines weighing four, five, and six tons.

The engines made by them will be warranted to travel at the following rates of speed, viz. a six ton engine at a speed of 15 miles per hour; a five ton engine at a speed of 18 miles per hour; a four ton engine at a speed of 23 1/2 miles per hour. Their performance in other respects will be warranted to equal that of the best English engines of the same class, with respect not only to their efficiency in the conveyance of burdens, but to their durability, and the cheapness and facility of their repairs.

The engines will be adapted to the use of anthracite coal, blue wood, coke, or any other fuel hitherto used in locomotive engines.

The terms shall be quite as favorable, and even more moderate, than those on which engines of the same class can be procured from abroad.

All orders for engines, &c. and other communications in reference to the subject, will be addressed to the subscriber, in the city of Philadelphia, and shall receive prompt attention.

By order of the Company, WILLIAM NORRIS, Secretary.

December 2d, 1833.

For further information on this subject see No. 40, page 772 of this Journal.

ALBANY SEED-STORE AND HORTICULTURAL REPOSITORY.

The subscriber having resumed the charge of the above establishment, is now enabled to furnish traders and others with FRESH GARDEN SEEDS, upon very favorable terms, and of the growth of 1833, warranted of the best quality.

The greatest care and attention has been bestowed upon the growing and saving of seeds, and none will be sold at this establishment excepting those raised expressly for it, and by experienced seedsmen; and those kinds imported which cannot be raised to perfection in this country; these are from the best houses in Europe, and may be relied upon as genuine.

It is earnestly requested whenever there are any failures hereafter, they should be represented to the subscriber; not that it is possible to obviate unfavorable seasons and circumstances, but that satisfaction may be rendered and perfection approximated.

Also—French Lucern, White Dutch Clover, White Mulberry Seed, genuine Mangel Wurzel, Yellow Locust, Ruta Baga, and Field Turnip Seeds, well worth the attention of Farmers.

W. THORBURN,

347 N. Market st. (opposite Post Office.)

Catalogues may be had at the Store; if sent for by mail, will be forwarded gratis. Orders solicited early, as the better justice can be done in the execution.

Mr. Thorburn is also Agent for the following publications, to wit:—

NEW YORK FARMER and American Gardener's Magazine.

MECHANICS' MAGAZINE and Register of Inventions & Improvements.

AMERICAN RAILROAD JOURNAL and Advocate of Internal Improvements; and the

NEW-YORK AMERICAN, Daily, Tri-Weekly, and Semi-Weekly; either or all of which may be seen and obtained by those who wish them; by calling at 347 North Market street, Albany.

STEPHENSON,

Builder of a superior style of Passenger Cars for Railroads
No. 264 Elizabeth street, near Bloeker street,
New-York.

RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part of the New-York and Harlem Railroad, now in operation.
J 25 1f

RAILROAD CAR WHEELS, BOXES AND
AND OTHER RAILROAD CASTINGS.

Also, AXLES furnished and fitted to wheels complete at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to.
Also, CAR SPRINGS.

Also, Flange Tires turned complete.

J8 ROGERS, KETCHUM & GROSVENOR.

NOVELTY WORKS,

Near Dry Dock, New-York.

THOMAS B. STILLMAN, Manufacturer of Steam Engines, Boilers, Railroad and Mill Work, Lathes, Presses, and other Machinery. Also, Dr. Nott's Patent Tubular Boilers, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited.
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INSTRUMENTS.

SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

EWING & HEARTY, at the sign of the Quadrant, No. 58 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude.

For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewing & Hartey.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable.

They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES F. STABLER,

Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' Instruments of your Manufacture, particularly Spirit Levels, and Surveyor's Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustment.

These Instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

WILLIAM HOWARD, U. S. Civil Engineer.

Baltimore, May 1st, 1833.

To Messrs Ewing and Hartey.—As you have asked me to give my opinion of the merits of those instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming acquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by my self, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The effects you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprise so well merits, I remain, yours, &c.

B. H. LATROBE,

Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them, upon application, to any person desirous of perusing the same.
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TOWNSEND & DUFFEE, of Palmyra, Manufacturers of Railroad Rope, having removed their establishment to Hudson, under the name of Duffee, May & Co. offer to supply Rope of any required length (without splices) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J. B. Jervis, Eng. M. & H. R. R. Co., Albany; or James Archibald, Engineer Hudson and Delaware Canal and Railroad Company, Carbondale, Luzerne county, Pennsylvania.
Hudson, Columbia county, New-York, {
January 29, 1833.

NOTICE TO MANUFACTURERS.

SIMON FAIRMAN, of the village of Lansingburgh, in the county of Rensselaer, and state of New-York, has invented and put in operation a Machine for making Wrought Nails with square points. This machine will make about sixty 6d nails, and about forty 10d nails in a minute, and in the same proportion larger sizes, even to spikes for ships. The nail is hammered and comes from the machine completely fitted to redness, that its capacity for being cleached is good and sure. One horse power is sufficient to drive one machine, and may easily be applied where such power for driving machinery is in operation. Said Fairman will make, vend and warrant machines as above, to any persons who may apply for them as soon as they may be made, and on the most reasonable terms. He also desires to sell one half of his patent right for the use of said machines throughout the United States. Any person desiring further information, or to purchase, will please to call at the machine shop of Mr. John Humphrey, in the village of Lansingburgh.—August 15, 1833.
A20 1f RM&F

RAILWAY IRON.

Ninety-five tons of 1 inch by 1 inch,	lengths of 14 to 16 feet counter sunk holes, ends cut at an angle of 45 degrees with splicing plates, nails to suit.
200 do. 1 1/2 do. 1 inch,	do.
40 do. 1 1/2 do. 1 inch,	do.
800 do. 2 do. 1 inch,	do.
500 do. 2 1/2 do. 1 inch,	do.
soon expected.	

250 do. of Edge Rails of 36 lbs. per yard, with the requisite chairs, keys and pins.

Wrought Iron Rims of 30, 33, and 36 inches diameter for Wheels of Railway Cars, and of 60 inches diameter for Locomotive wheels.

Axles of 2 1/2, 3, 3 1/2, 4, and 4 1/2 inches diameter for Railway Cars and Locomotives of patent iron.

The above will be sold free of duty, to State Governments and Incorporated Governments, and the Drawback taken in part payment.
A. & G. RALSTON.

9 South Front street, Philadelphia.

Models and samples of all the different kinds of Rails, Chairs, Pins, Wedges, Spikes, and Splicing Plates, in use, both in this country and Great Britain, will be exhibited to those disposed to examine them.
d71mewr

SURVEYORS' INSTRUMENTS.

Compasses of various sizes and of superior quality warranted.

Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by
E. & G. W. BLUNT, 154 Water street, corner of Maiden Lane.

ENGINEERING AND SURVEYING INSTRUMENTS.

The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely new: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy; also, a Railroad Goniometer, with two Telescopes; and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.
WM. J. YOUNG,

Mathematical Instrument Maker, No. 9 Dock street, Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested:—
Baltimore, 1832.

In reply to thy inquiries respecting the Instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad. I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Departments.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable.

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sight, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to later angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails;—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,

JAMES F. STABLER, Superintendent of Construction of Baltimore and Ohio Railroad.

Philadelphia, February, 1833.

Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors.
E. M. GILL, Civil Engineer.

Germanstown, February, 1833.

For a year past I have used Instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these Instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY R. CAMPBELL, Eng. Philad.,
Geomet. and Norist. Railroad

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THE ARMY.
HEAD QUARTERS OF THE ARMY,
Adjutant General's Office,
WASHINGTON, APRIL 19, 1834.

Order No. 31.

I. The Field Officers of Artillery are assigned as follows:

* 1st Reg't of Artillery,	Colonel,	Fort Washington.
	Lt. Col.	Fort Severn.
	Major,	Fort Moultrie.
+ 2d Reg't of Artillery,	Colonel,	Augusta Arsenal, Geo.
	Lt. Colonel,	Fort Marion.
	Major, (act'g)	Fort Monroe.
+ 3d Reg't of Artillery,	Colonel,	Fort Monroe.
	Lt. Colonel,	Fort Wolcott.
	Major,	Fort Independence.
+ 4th Reg't of Artillery,	Colonel,	Fort McHenry.
	Lt. Colonel,	Fort Columbus.
	Major,	Fort Monroe.

II. Company B, 1st Artillery, now stationed at Fort McHenry, will relieve Company I, of the 4th Artillery, at Fort Severn; and on being so relieved, Bvt Major Erving, with his Company, will repair to Fort McHenry. Capt. F. Whiting's Company, (I,) 1st Artillery, will repair to Fort Washington, and relieve Company F, when Bvt Major Mason, with his company, will proceed to join the garrison at Fort Monroe.

III. Fort Niagara will be evacuated, and the garrison, consisting of Companies D and H, of the 2d Infantry, will proceed to Fort Gratiot, and there relieve Companies E and H, of the 4th Artillery, when Bvt Major Payne, with his command, will proceed to New York, and thence, with his Company, take post at Fort Trumbull; Company H will join the garrison of Fort Hamilton.

IV. The Head Quarters of the 2d and 4th Regiments of Infantry are transferred, the former from Fort Niagara to Madison Barracks, the latter from Mobile to Baton Rouge.

V. The Field Officers of Artillery and Infantry, will proceed to their respective stations, as above designated, on the 31st of May, or as soon as circumstances will permit; and the movement of troops, under the direction of the respective commanding officers, will take place without unnecessary delay.

VI. Assistant Surgeon Minie is assigned to duty at Castle Pinckney, to which post he will repair without delay. Assistant Surgeon Stinnache will continue on duty at Fort Gratiot.

VII. The garrison of Fort Monroe will no longer be regarded as the exclusive School of Practice;—as, at all military posts, the commanding officer will be responsible for the discipline and proper instruction of the troops, in all their duties. The usual reports and returns from the post, will be made direct to the General of Department, who will exercise the same authority at Fort Monroe as at other military posts within his command: accordingly, the monthly, and other returns and reports, heretofore received from Fort Monroe, as of "The Military School of Practice," will be discontinued.

By order of Major General MACOMB,
R. JONES, Adjutant General.

* House, †Lindsay, †Armistead, §Fenwick.
Walbach, Crane, Bankhead, Eustis.
Gates, Heileman, Brooks, Fanning.

[From the New Orleans Bee of 5th inst.]

Capture of an English armed Schooner.—We understand from a person whom we deem worthy of credence that he learned on board the schooner *Tita*, which arrived here day before yesterday from Mantanzas, that the Spanish revenue cutter, *Retilla*, had boarded and taken, on the coast of Cuba, an English schooner of war. The circumstances were briefly these:—The English vessel taking the Spanish cutter for a slave-trader, as was afterwards ascertained, fired upon her, whereupon she hoisted her colors, which having not been deemed a satisfactory evidence of her real character, a broadside succeeded, upon which an engagement took place, which resulted in the capture of the schooner, whose loss amounted to 14 men.

Sudden Death.—A man named James Brack, a clerk employed at the office of the Old Countryman, in passing down Frankfort street, about one o'clock yesterday afternoon, suddenly fell upon the sidewalk opposite the Pewter Mug, in a state of insensibility. He was immediately taken into an adjacent house, and efforts were made to revive him, but without success.—[Standard.]

The river St. Lawrence was open on the 14th of April, from Montreal to Quebec.

Capt. Lewis, of the schooner Northampton, arrived yesterday from the Island of St. Vincent, re-

ports that on the day he sailed, three successive shocks of an earthquake were felt there, one of which was extremely violent, and it was supposed did great damage. The Sea and the harbor was so high that it was with great difficulty that the vessels at anchor were prevented going ashore. A number of negro houses were destroyed, but the Captain had an opportunity of ascertaining whether any lives were lost.—[Jour. Com.]

Destruction of a Pirate and Death of an Officer and several men on board an English Man of War.—The New Bedford Mercury, says that Capt. Bennet of the ship London Packet, arrived there on Saturday, gives information that on the 3d March, off Ascension Island, he was spoken by his Britannic Majesty's man of war Carlow, and was informed that on the coast of West Africa, the Carlow fell in with a suspicious looking vessel armed with five guns and a carronade on a pivot amidships. The Carlow sent her boats to board, when the boats got along-side they found the vessel deserted, and in a few minutes after she blew up, killing one officer and several men belonging to the C. It was supposed that the explosion was caused by a match being led to the magazine and fired before the piratical crew left her. The English commander immediately sent his boats on shore and succeeded in capturing nineteen pirates, who were then in irons on board his ship.

It was ascertained from articles on board that this was the vessel that had robbed the brig Mexican of Salem of goods and \$25,000 in specie. The pirates were Spaniards and Portuguese. The commander of the Carlow sent letters by Capt. Bennet to the owners of the Mexican.

MONMOUTH N. J.—One or two vessels laden with oranges, came ashore near Squan, sometime last week, in consequence of which, we have had oranges here by wagon loads.

The Susquehanna Democrat (Pa.) of 16th April, has this significant editorial article:

There are several rumors in circulation too ridiculous to mention.

An Act relating to the Court of Common Pleas for the City and County of New York. Passed April 11, 1834.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

§ 1. An Associate Judge shall be appointed for the Court of Common Pleas for the City and County of New York, in the same manner as Judges of the several Courts of Common Pleas of this State now are appointed, who shall be a Counsellor of the Supreme Court, and shall have the same power to hold said Court of Common Pleas as the first Judge thereof, and may equally with him as presiding Judge, authenticate the records of said Court.

§ 2. Such Associate Judge shall receive a like trial fee, for every cause noticed for trial in said Court as is allowed in the Superior Court of the said city, to be received in the same manner and with the same restriction.

§ 3. Each term of said Court may continue until the end of the fourth week after the commencement thereof, and a new panel of Jurors may, by order of said Court, be summoned for the two last weeks of said term, and any writ or process may be tested on any day in term, and be made returnable on any other day in the same term or the next term; provided, however, that said Court may be adjourned on any day previous to the expiration of term, and also from any one day in the term over to any other day in the same term.

§ 4. The said first Judge and Associate Judge shall, except when sick or absent from said city, have sole and exclusive authority at chambers touching any suit, security, judgment or proceeding in said Court.

§ 5. All the powers now vested in the said first Judge by virtue of the Statutes of this State relative to any legal proceedings, are hereby given also to the said Associate Judge; and any proceeding commenced by one of said Judges, may, in his absence, be continued, decided, and perfected by the other of said Judges.

§ 6. The said Associate Judge shall have the same power as the said first Judge to hold, and in the same manner preside, in the Courts of General Sessions of the peace in and for the City and County of New York.

§ 7. This act shall continue in force for the term of five years from its passage.

§ 8. This act shall take effect immediately after the passage thereof.

State of New York, Secretary's Office.

FIELD FLOWERS.—By Thomas Campbell.

Ye field flowers! the gardens eclipse you, 'tis true?
Yet, wildings of nature, I doat upon you,
For ye wait me to summers of old,
When the earth teemed around me with fairy delight,
And when daisies and buttercups gladdened my sight,
Like treasures of silver and gold.
I love you for lulling me back into dreams
Of the blue highland mountains and echoing streams,
And of broken glades breathing their balm,
While the deer was seen glancing in sunshine remote,
And the deep mellow crush of the wood-pigeon's note,
Made music that sweetened the calm.
Not a pastoral song has a pleasanter tune
Than ye speak to my heart, little wildings of June:
Of old ruinous castles ye tell,
Where I thought it delighted your beauties to find
When the magic of Nature first breathed on my mind,
And your blossoms were part of her spell.
Ev'n now what affections the violet awakes:
What loved little islands, twice seen in their lakes,
Can the wild water-lily restore;
What landscapes I read in the primrose's looks,
And what pictures of pebbled and minnowy brooks,
In the vetches that tangled their shore.
Earth's cultureless buds, to my heart you were dear,
Ere the fervour of passion, or ague of fear,
Had scathed my existence's bloom:
Once I welcome you more, in love's passionless stage,
With the visions of youth to revisit my age,
And I wish you to grow on my tomb.

VOL. III. OF THE RAILROAD JOURNAL AND ADVOCATE OF INTERNAL IMPROVEMENTS is published once a week in quarto form, with 16 pages to each number, at \$3; or in semi-monthly form, of 32 pages, stitched in a cover of colored paper, at \$4 per annum, in advance. The first and second volumes of the Journal may be had in two parts to the year, either stitched in covers or bound in boards, at the subscription price, with price of binding, in one part, 50 cents, in two parts \$1 per volume. Those in covers may be sent by mail to any part of the country, the same as a magazine. Published at No. 35 Wall st., New-York, by D. K. MINOR, Editor and Proprietor.

THE MECHANICS' MAGAZINE AND REGISTER OF INVENTIONS AND IMPROVEMENTS is now just commencing its second year. It will be continued in a manner altogether superior to that of the first year. It has drawn forth many valuable correspondents, in different parts of the country, with the assistance of whom, and those who may hereafter contribute to its columns, together with the ability of Mr. JOHN KNIGHT, formerly, and for several years, proprietor and publisher of the LONDON MECHANICS' MAGAZINE, who is engaged as Editor, the proprietor has no hesitation in saying that it will be found worthy of an extended circulation and a liberal support. The first year, or two first volumes, having been stereotyped, may now be had either in numbers, or bound in boards—either at wholesale or retail. Price \$1 50 per vol. in numbers, or \$1 75 in boards, or \$3 per annum. A liberal discount made to the trade. Published by the proprietor, D. K. MINOR, at No. 35 Wall st. N. Y.

THE NEW-YORK FARMER AND AMERICAN GARDENER'S MAGAZINE, has commenced the second volume of a new series. It is published once a month, in quarto form of 32 pages to each monthly number, at \$3 per annum in advance. The last volume may be had either stitched in a cover, so as to be sent by mail, or in boards. Price, stitched, \$3 25; in boards, \$3 50. Each subscriber who pays in advance, or previous to the first of April, free of postage or commission, will be entitled to eight additional pages to each monthly number, or 96 extra pages to the volume. Published at No. 35 Wallstreet, N. Y. D. K. MINOR, Proprietor.

A QUARTERLY JOURNAL OF AGRICULTURE AND MECHANICS will hereafter be published at the same office. Each quarterly number will contain about 300 large octavo pages, embracing the most choice articles from the best agricultural and mechanical publications both in America and Europe. It will form 2 volumes to the year, of about 640 pages each, and will be put up like other quarterly publications, so as to be sent by mail Price, \$5 per annum, in advance.

N. B. A small edition only will be published. Also, the NEW-YORK AMERICAN, daily, tri-weekly, and semi-weekly.

All Letters and Communications for the above publications, may be addressed, free of postage, to D. K. MINOR.

RAILROAD TURNOUTS, REVOLVING PLATFORMS AND SIDELINGS.

The subscriber having been for some years engaged in constructing turnouts, and inserting the necessary switches and fixtures appertaining to the same, on the Baltimore and Ohio Railroad,—and as those works on that road will be shortly completed, he is desirous of being employed by any Railroad Company requiring work of the above description.

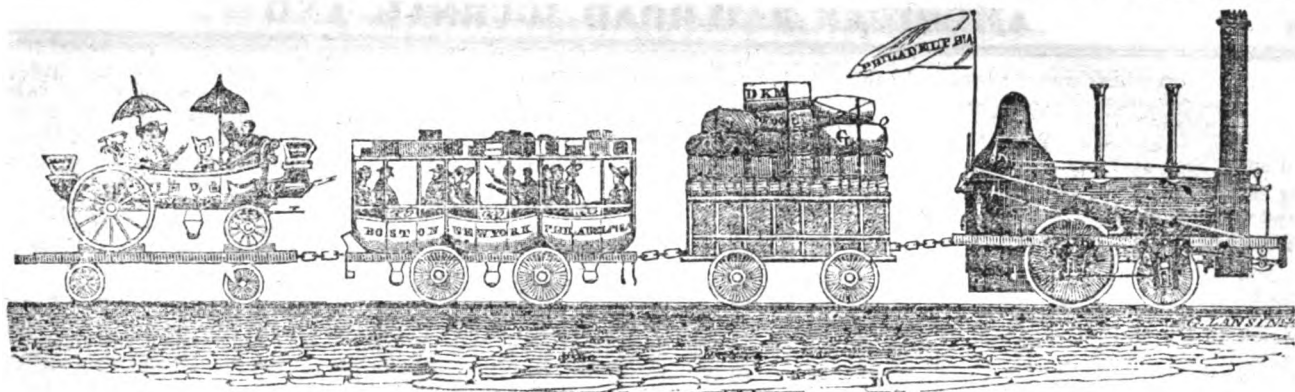
He will either contract at a fixed price to execute the work, he providing all the necessary materials and fixtures, or otherwise,—or he will engage himself at a stated salary.

In relation to his abilities and general character he begs to refer any Company, disposed to engage him, to the Baltimore and Ohio Railroad Company.

Letters can be addressed to him at the Office of Construction Baltimore and Ohio Railroad, Baltimore.

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REUBEN ALER.



AMERICAN RAILROAD JOURNAL, AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT No. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, Editor.]

SATURDAY, MAY 3, 1834.

[VOLUME III.—No. 17.]

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, MAY 3, 1834.

TO CORRESPONDENTS.—P. G. V. will please accept our thanks for his monthly statement of the weather. In reply to his query in his communication of the 6th April, containing the table for March, we would observe that we have received a report for every month, except December, 1833. With regard to the *irregularity* of the receipt of the Journal, and other New-York papers, referred to in the annexed extract, we can only say that the *fault* and “neglect” are not with us. Our papers are carefully and regularly mailed.

“I received yesterday, by mail, papers from New-York (say only) dated from 24th January, 1834, to March 15, 1834, inclusive, all in original envelopes, and in good order. Intermediate numbers I have received in part before, but not all yet. How is it possible that such neglects should or ought to occur.

“Avoylle Ferry, La., April 6th, 1834.”

We also acknowledge our indebtedness to V. D. G. for his frequent and valuable communications upon the subject of railroads; F., upon internal improvements; S. D., upon road-making, and other subjects. This communications are always acceptable, although sometimes delayed by other matter on hand.

We have received, and shall, at our earliest convenience, examine the first annual report of the Philipsburgh and Juniata Railroad Company. The President, H. Phillip, Esq., to whom we are indebted for it, will please accept our thanks.

SLOOP CANAL FROM THE HUDSON TO THE LAKES.—In the Assembly of New-York, on the 14th of April, Mr. O. Robinson, from a select committee to whom was referred the petitions

of numerous inhabitants of Oneida, Oswego, and other counties, for the exploration, survey and estimate of a sloop canal from the city of Utica to the village of Oswego, on Lake Ontario, made an interesting report, and concluded by introducing a bill to provide for the survey of a ship or steamboat canal from Albany to Oswego, and also to improve the outlets of the Onondaga, Cayuga and Seneca Lakes.

The bill provides for the survey of the route commencing at Albany, thence up the valley of the Mohawk to the Oneida Lake, and thence down the outlet of said Lake, and the Oswego river, to Oswego, on Lake Ontario, of sufficient capacity to admit vessels of 200 tons burthen, also, so to improve the outlets of the Onondaga, Cayuga and Seneca Lakes, as to admit vessels of like dimensions.

On motion of Mr. Humphrey, four times the usual number of this report were ordered to be printed.

PENNSYLVANIA CANALS AND RAILROADS.—The following paragraph from the Harrisburgh Reporter of Friday last, presents a gratifying picture:

The several lines of the Pennsylvania canal, are in excellent navigable order, and in full operation. The slight breach on the Juniata, which interrupted the navigation of that division for a few days, has been repaired. The Portage railroad is also in full operation, and immense quantities of produce and merchandise daily pass over it. The receipt of tolls on our public improvements since the commencement of the present financial year, have more than trebled the amount received during the same period of the last financial year! The receipts of the treasury up to this time, the tolls in the hands of the collectors not paid in, and the probable receipts for the balance of this month, will amount to upwards of one hundred and ten thousand dollars! During the corresponding period of the last financial years, the receipts were thirty-four thousand two hundred and thirty-eight dollars, showing an increase thus far, of upwards of seventy-five thousand dollars!!!

To the Editor of the Railroad Journal, &c.

SIR,—As I am a farmer, I have been so much occupied by my attention to planting trees, that I have really not had time to attend to my other business. The time for executing such business, in the spring especially, is so short, that it requires close attention to perform the work in season. I have now, however, got nearly through, so that you may rely on my communication being in readiness for your next number.

Your obedient servant, J. S.
Hoboken, April 23, 1834.

On the Construction of Diving Bells. By S. D. To the Editor of the Railroad Journal and Advocate of Internal Improvements.

SIR,—In the construction of the common diving-bell, an instrument now very extensively and importantly used, a complication of pulleys, barrels, and ropes, always liable to accident and interruption, is necessary to insure a supply of pure air to the person in the bell, and to remove the impure air constantly generating. It has struck me sometimes—although from its not having been already adopted, there probably exists some insuperable objection to the proposal, which I do not perceive—that a condensing syringe might be used with great advantage. This syringe might work into a small reservoir above water, from which the communication (a well-constructed hose would serve every purpose) would proceed to the bell; this hose, it is evident, might be of any length, coiled even while in use on the deck of the lighter, which always accompanies the bell, and connecting by means of an opening in the top of the bell, to which might be attached a stop-cock, by which the person inside would always be enabled to govern the supply. For the removal of the impure air, a second set of hose should connect with a second stop-cock; the upper mouth of this set would be in immediate communication with the atmosphere, while the condensing syringe above was supplying the bell with additional air, and thereby expelling from it additional water, the person inside would occasionally, at his discretion, open this second stop-cock, and allow a portion of the impure air to escape, which would be immediately replaced by pure air from the first set of hose, and thus a current of air might be created apparently more perfect, and attended with much less trouble than by the methods in present use. A sketch would more readily explain the simplicity of the mode; but a sketch requires a wood cut, and while doubting whether the idea is not open to some peculiar objection, I have not troubled you with one.

Very respectfully, Sir, S. D.
Boston, April 21, 1834.

On the Location of Railroad Curvatures. By VAN DE GRAAFF. [For the American Railroad Journal, and Advocate of Internal Improvements.—Continued from p. 162.]

Although a system of rectangular lines, traced from given co-ordinate axes, will, in general, furnish the best *data* for computation, yet cases sometimes occur when those calculations have to be made either from computed curves, or curves actually laid upon the ground. In a first location this case will sometimes happen, when, from difficulties which are found in advance of a line, it becomes necessary to

change a part of that which was either already computed, or actually laid. Such a case will sometimes occur, even when the operations in the field have been skilfully conducted; and in laying curves upon a surface already graded, it will be frequently necessary to compute from curves actually traced. The principles contained in the four last articles have been given chiefly with this object in view. But with regard to the two last articles, (7 and 8,) it may be observed, that, *when the curves are long*, it becomes very important to have some method of obtaining the position of the line *w* from the extremity of either curve; for a knowledge of only the length of that line will, in such a case, be of very little use in the field, unless the direction is also known, in order that the termination of any proposed curve may be immediately pointed out by an instrument placed at the termination of a given curve. There is no difficulty in obtaining very convenient formulas for the object thus proposed; but for want of room in this journal, I must proceed to other things.

10. Take a system of rectangular co-ordinate axes, having their origin at a given station in a tangent line, from which a certain required curve is to be laid, passing through a point designated by the co-ordinates x y ; the given tangent line coinciding with the axis of x : and let a system of rectangular lines be traced from the origin to the designated point, agreeably to the method proposed in article 4. It is then required to determine a method by means of which the instrument may be immediately directed into the true tangent at the designated point.

Let the successive rectangular lines, as traced from the origin, be represented by a b c d , &c. It may then be observed that the safest method of recording the lines a b c d , &c., in the field, will be to take a blank form,

$$\begin{Bmatrix} x = \\ y = \end{Bmatrix}, \text{ and then record each line in its proper equation, and with its proper sign, immediately as their values are determined by measurement.}$$

A matter of considerable importance in the field, after the rectangular lines a b c , &c. have been traced to any proposed point, is to be able to examine, by the direction of the instrument, what the direction of the curve would be passing from the origin through that given point. Indeed, in difficult situations, a curve cannot be selected without such a datum; and if the rectangular lines a b c , &c. were not sufficient to furnish that datum with facility, a curve would have to be actually laid upon the ground, in order to judge of its fitness, even if a point were known through which it would pass. It would evidently be not difficult to direct the instrument, when placed at the given point, into the true tangent there, if the inclination of that tangent to the primitive tangent at the origin were known. For the last rectangular line traced will, of course, be either parallel to the primitive tangent, or perpendicular to it; and, in either case, it furnishes the means of directing the instrument into a line parallel to the primitive tangent at the origin. It is then only necessary to deflect an angle equal to the inclination of those two tangents, when that inclination is known, and the direction of the curve at the given point may then be perceived at once, from the position of the instrument, without that delay which would be occasioned by actually tracing a curve upon the ground, which must ultimately be relaid. The result, therefore, is, that a formula must be investigated, expressing the inclination of the two tangents in terms of the given co-ordinates x y . Take D to denote the inclination required;

then $D = 2 \pi T$, and consequently, by art. 2,

$$x = \frac{\sin D}{2 \sin T}, \text{ and } y = \frac{1 - \cos D}{2 \sin T}.$$

Eliminating D from those two equations, the result is,

$$\cot. \frac{1}{2} D = \frac{x}{y}.$$

Such is the formula required, and its applications are very extensive in the field: for it will thus be seen at once, whether or not the given point can be maintained; and this fact should be always ascertained, and the most judicious line definitely selected, before any curve is actually traced.

11. It is frequently necessary that several points should be designated, through which a curve is required to pass by means of a change of curvature at each of those points. To show the method of operation which ought to be pursued under such circumstances, take a system of rectangular co-ordinate axes, coinciding with the primitive origin and tangent line. Trace, parallel to those axes, a system of rectangular lines, given by the equations

$$\begin{Bmatrix} x = a + b + c + \&c. \\ y = d + e + f + \&c. \end{Bmatrix}$$

and terminating at the first designated point. Let the instrument be then placed at that point, and directed into tangent agreeably to the method explained in the last article. Take this second tangent as the axis of x , for a new system of rectangular co-ordinate axes; and parallel to these new axes, trace a second system of rectangular lines, given by the equations

$$\begin{Bmatrix} x = a' + b' + c' + \&c. \\ y = d' + e' + f' + \&c. \end{Bmatrix}$$

and terminating at the second designated point. Let the instrument be now placed at this second point, and again directed into the proper tangent by the same means as before. Take this third tangent as the axis of x , for a third system of rectangular co-ordinate axes; and parallel to this second new system of axes, trace a third system of rectangular lines, given by the equations,

$$\begin{Bmatrix} x = a'' + b'' + c'' + \&c. \\ y = d'' + e'' + f'' + \&c. \end{Bmatrix}$$

and terminating at the third designated point. Continue this obvious order of proceeding, until equations

$$\begin{Bmatrix} x = \\ y = \end{Bmatrix}$$

have been obtained for all the designated points; and then by means of those equations, and article 4, compute all the moduli of curvatures. Returning now with the instrument to the primitive origin, let each curve be traced from its proper modulus of curvature, and the line will be found to pass through all the designated points. If proper care be observed in chaining the different systems of rectangular lines, by means of which the equations

$$\begin{Bmatrix} x = \\ y = \end{Bmatrix}$$

have been obtained, there can be no disappointment in the result; and, consequently, if the designated points have been judiciously selected, there will very seldom be a necessity of tracing the same part of a line the second time; and thus the method of co-ordinate axes, when skilfully conducted, will constitute one of the most important systems of operations connected with the location of railroad lines.

In tracing the various systems of rectangular lines through the different points which may be designated for a curve, there is a principle of practical convenience which must be mentioned. I mean the principle of designating such points for a change of curvature, as will cause each section of the whole curve, between the designated points, to be composed of an integer number of chains, when those curves come to be ultimately traced, after their respective moduli of curvatures have been as-

certain by the methods explained above. It is indeed necessary in every case, except where the road-way is perfectly horizontal, to know the length of each of those separate curves, in order to select the designated point correctly with respect to grade; and this datum must therefore always accompany the levels. When a system of those rectangular lines have been traced to any given point, and the resulting equations

$$\begin{Bmatrix} x = \\ y = \end{Bmatrix}$$

have been thus obtained, the distance from the origin to that given point, in a right line, will obviously be truly expressed by $\sqrt{x^2 + y^2}$; which is a formula rendered very convenient for use, by means of a table of the squares and square roots of numbers. And this quantity may be frequently taken as the length of the intervening curve, by which to compute what the grade would be at that given point, and will always furnish an easy method of obtaining the approximate distance necessary in making a selection for the position of a line, as far as the levels have an influence. The next object, then, must be finally to designate such a point as near the point fixed by the levels as a desirable curvature will permit, and which will produce a curve, from the origin, containing an integer number of chains. The preceding principles will furnish very simple means of obtaining the desired point; but I cannot here enter farther into such details.

12. Let two curves be under consideration, having different origins, and tangent lines; and let one of those curves be given, from a system of rectangular lines or otherwise, and a point designated therein through which the other curve is required to pass. It is proposed to explain a method by means of which the modulus of curvature of the required curve may be computed.

Take a system of rectangular co-ordinate axes, corresponding with the given origin and tangent line of each curve respectively, and let the co-ordinates of that point in the given curve which is designated for the required curve to meet, as taken with reference to the co-ordinate axes of the given curve, be x y ; the values of these co-ordinates being computed by article 2, if the given curve be already laid in the field, but determined by means of a system of rectangular lines, when that curve has not been actually laid. Let the co-ordinates of the new origin, taken with reference to the axes of x y , and determined either by computation, or by means of a system of rectangular lines, be denoted by α , β ; α being supposed to coincide with the axis of x . Take z to denote the given inclination of the tangents at the origins of the two curves.

It is sufficiently obvious that the required modulus of curvature will be immediately derived from article 4, when the co-ordinates x' y' , of the designated point, as taken with reference to the new origin and axes, becomes known. The formulas for those new co-ordinates are,

$$x' = y + \beta. \sin. z + x + \alpha. \cos. z$$

$$y' = y + \beta. \cos. z - x + \alpha. \sin. z$$

These are the well known expressions given by most authors for the transformation of rectangular co-ordinates, and they only here stand transposed in such a manner as will best suit the engineer's purpose in the present inquiry. By means of article 4, the above equations immediately produce the following formula, for the value of the new modulus of curvature T' :

$$\sin. T' = \frac{y + \beta. \cos. z - x + \alpha. \sin. z}{y + \beta^2 + x + \alpha^2}$$

The theorem thus obtained has a very good form for computation, and when skilfully applied, it will frequently save much labor in the field, which would be otherwise required, when certain alterations are proposed in a line, once computed, or actually traced. In the prac-

tical use of this theorem, particular attention must be paid to the algebraic sign of all the quantities; but this does not here require an explanation.

VAN DE GRAAFF.

Lexington, Ky., April, 1834.

Experiments made on the Forth and Clyde Canal, to ascertain the best form of Canal Boats. By J. ROBINSON, Esq., Secretary of the Royal Society of Edinburgh. [From the Transactions of the Society of Arts, Second Part for 1833.*]

In the way in which experiments to ascertain the forms of least resistance of floating bodies have generally been made, so costly an apparatus, and so much precision and skill in observation, have been required in order to give any value to the results, that comparatively few persons have been enabled to undertake such investigations, notwithstanding the obvious advantage to be derived by those interested in canal navigation, from an accurate knowledge of the forms most suitable for vessels, according to the circumstances under which they are to be employed.

The great increase of speed which has lately been effected in railway carriage having made it expedient that corresponding improvements should be introduced into the transport of goods on canals, it became the interest of canal proprietors to use active endeavors for this purpose. The directors of the Forth and Clyde canal have shown themselves particularly well disposed to encourage such investigations, and have applied a considerable portion of their revenue to the construction of experimental steam-vessels, and to the improvement of the facings of the canal, so as to admit of the transit of large vessels at rates of speed which, until lately, have been supposed impracticable in confined water.

In order to obtain a maximum of effect from the power employed in such steam-vessels, it was necessary to ascertain as nearly as possible the form which should be given to their bottoms: and as much diversity of opinion existed on this point, I ventured to suggest to the directors that experiments should be made on the canal with models of a sufficient size to admit of safe conclusions being drawn from the results of the trials.

In consequence of this suggestion, four models were prepared, of the following dimensions:

- No. 1 was 8 feet 3 inches long, 2 feet wide, and 1 foot deep.
- No. 2 was 8 feet 3 inches long, 2 feet wide, and 1 foot 6 inches deep.
- No. 3 was 8 feet 3 inches long, 2 feet wide, and 1 foot 6 inches deep.
- No. 4 was 9 feet 1 inch each part, 1 foot wide, and 1 foot deep.

And the weight of each 187½ lbs.

No. 1 was quite flat on the floor, rounded at the bilges, and perpendicular in the sides at the midship section, but with a fine entrance and run.

No. 2 was made in the proportions of an ordinary coasting trader.

No. 3 in the proportions of a sharp-built schooner.

No. 4 was a twin boat, similar in its sections to No. 1, only that the breadth of each portion was half of the other breadth, while the depth was the same.

The weight of all the models being alike, their displacement of water was equal, although their draft, or depth of immersion, was necessarily different.

The usual way of trying the resistance of floating bodies is by drawing them across a dock or basin, by a cord running over delicately hung pulleys on a high mast, and with certain weights attached: the time is accurately noted which each form requires to move through a certain space, and the comparative resistances are calculated from these elements.

*Mr. Robinson was presented by the Society with their large silver medal for this very valuable communication.

This method presents many difficulties and disadvantages; and I therefore resolved on adopting a different one, which should admit of each experiment being carried on through a much greater space than can be accomplished by means of cords and pulleys. My first intention was to tow each model by a long slender line from the after part of a light steamboat, which was capable of running about seven miles per hour in the canal. This line was to have been attached to an hydrostatic dynamometer, and by this means the strain exerted on the towing line at every different rate of speed by each of the models in succession might have been approximated. I was enabled, however, by a suggestion from an ingenious friend (Mr. Oldham, of the Bank of Ireland), to adopt a much more summary and satisfactory way of determining the comparative resistance of the different models; and as it was the comparative resistance alone which required investigation, there could be no inducement to go through the more tedious process of trying the resistances separately, and of incurring the risk of error from mistakes in reading off the indications of the dynamometer.

I prepared accordingly a spar or yoke, of 16 feet 8 inches long, which was divided into 100 parts of 2 inches each; a small eye-bolt was fixed at each extremity, and a shifting hasp fitted to the middle part. With this yoke all the experiments were made by the two following processes. 1st, a model was attached by a slender towing-line to each eye-bolt, and the hasp was fixed exactly in the middle of the yoke, and linked to an outrigger on the steam-vessel, which was then set in motion at the required speed. If it was found that one of the models preceded the other, in consequence of

its offering less resistance, the hasp was shifted along the spar towards the sluggish one, until the resistances were balanced, and the two models ran abreast of one another. The relative lengths of the arms of the yoke then gave an inverse measure of the comparative resistances of the models, at that rate of speed; this being noted down, the hasp was brought again to the middle of the yoke, and the model which showed least resistance was by degrees loaded with weights until it again exactly balanced the other, and swam abreast of it; the amount of the added weights being likewise noted, afforded a second measure of the difference of the resistance of the two models.

Each of these forms of the experiment was gone through with different pairs of the models, and was frequently repeated through long spaces of the canal, as it was found that various circumstances interfered to render the resistances inconstant, such as approaching nearer to the one or the other side of the canal, passing a loaded vessel, or making a turn round a projecting part of the bank.

It was at first attempted to conduct the experiments by towing the models astern; but it was immediately found that the ripple of the wake of the steamer disturbed the uniformity of the resistance of the models. Various modifications were then tried with more satisfactory results, and finally the arrangement was made as follows: A spar, like a bolt-sprit, of about twenty feet in length, was run out a little above the level of the water from the bow of the steamer, the hasp of the yoke being attached by a link to the point of this spar, the models were in this way kept ahead of the steamer in smooth water, and were altogether undisturbed by any ripple or wave.

TABLE A.—Experiments with equal Loads.

Models tried.	United Weights of Vessel and Load.	Divisions in the arms of Yoke when at 3 miles per hour.	Difference.	Divisions in the Arms of Yoke when at 6 miles per hour.	Difference.
No. 1. Flat Vessel No. 2. Coaster....	192 each	48 52	4 div. or 1-12	50 50	None.
No. 1. Flat Vessel No. 2. Coaster....	256 "	46 54	8 div. or 1-6	50 50	do.
No. 1. Flat Vessel No. 2. Coaster....	320 "	47 53	6 div. or 1-8	49½ 50½	2-100 parts
No. 1. Flat Vessel No. 2. Coaster....	392 "	45 55	10 div. or 1-5	49 51	2 div. or 1-34.
No. 1. Flat Vessel No. 3. Schooner..	192 "	45 55	10 div. or 1-5	50 50	.....
No. 1. Flat Vessel No. 3. Schooner..	256 "	43 57	14 div. or 1-3	50 50	.....
No. 1. Flat Vessel No. 3. Schooner..	320 "	44 56	12 div. or 1-4	uncertain	
No. 1. Flat Vessel No. 3. Schooner..	392 "	45 55	10 div. or 1-5	49 51	2 div. or 1-34.
No. 1. Flat Vessel No. 4. Twin do..	256 "	50 50	0 0	uncertain	.....
No. 1. Flat Vessel No. 4. Twin do..	320 "	53 47	6 div. or 1-8	uncertain	.....
No. 1. Flat Vessel No. 4. Twin do..	392 "	52 48	4 div. or 1-12	uncertain	.....

In favor of No. 1.

TABLE B.—Experiments with equal Arms of the Yoke at 3 Miles per Hour.

Models compared.	Depth of Immersion in fathoms.	Weight of Vessels with their Loads.	Differences.
No. 1 Flat Vessel... No. 2 Coaster.....	4-91 8-5	256 lbs. 288 "	32 No. 2 carries 1-8 more than No. 1.
No. 1 Flat Vessel... No. 2 Coaster.....	6-083 10-083	320 " 392 "	72 No. 2 carries 2-9 more than No. 1.
No. 1 Flat Vessel... No. 3 Schooner...	4-17 8-41	192 " 234 "	42 No. 3 carries 2-9 more than No. 1.
No. 1 Flat Vessel... o. 3 Schooner....	5-75 10-25	320 " 362 "	42 No. 3 carries 2-15 more than No. 1.
No. 1 Flat Vessel... No. 4 Twin Vessel..	4-17 4	256 " 256 "	00 No difference at this rate of speed.

N. B.—The depth of immersion entered above is that observed when the vessels were at rest, and which did not appear to alter when in motion.

TABLE C.—Experiments with equal Arms of the Yoke at 6 miles per hour.

Models Compared.	Immersion in inches.	Weight of Models when loaded.	Difference.
No. 1. Flat Vessel....	4 2-12	192 lbs. }	—
No. 2. Coaster.....	6 4-12	192 " }	
No. 1. Flat Vessel....	4 11-12	256 " }	—
No. 2. Coaster.....	8 1-12	256 " }	
No. 1. Flat Vessel....	4 7-12	192 " }	—
No. 3. Schooner shape	7 9-12	192 " }	
No. 1. Flat Vessel....	4 11-12	256 " }	—
No. 3. Schooner shape	9 2-12	256 " }	
No. 1. Flat Vessel....	5 9-12	320 " }	—
No. 4. Twin Boat....	5 7-12	320 " }	

The draught of water noted in the column of immersions was that observed when the models were at rest previous to the commencement of each experiment; the actual immersion during the experiment was considerably less, especially in the flatter vessels; but there were no means of ascertaining it precisely.

The accompanying tables contain the results of these trials, from which the important inference may be drawn, that there is no form which will present a minimum resistance in all circumstances; and that the form which is easiest drawn through a canal at a low velocity does not possess the same advantages at a higher rate of speed.

By looking into the table A, experiment 1st, we see that, although the resistance of No. 1 be to that of No. 2 as 13 to 12, when the velocity is 3 miles per hour, yet when the speed is increased to 6 miles, the advantage which No. 2 had over the flatter vessel entirely disappears.

Again, in table B, we see that in one experiment No. 2 carries two-ninths more weight than No. 1, with equal resistance, when the velocity is 3 miles per hour; but that when the rate is raised to 6 miles, the loads require to be made the same in both, in order to equalise the resistance.

It appears, from numerous experiments made at intermediate speeds, that this change in the relative resistance is progressive; there is reason, therefore, to conclude, that if circumstances had admitted of carrying on the experiments at a higher velocity than 6 miles per hour, the flatter formed vessel would have attained a superiority over the sharper ones: this conclusion is corroborated by the fact, that the swiftest going steam-vessels which have been built in this country are those which are nearly quite flat in the floor for a great proportion of their whole length.

The first practical inference which may be drawn from these experiments is, that all vessels which are intended to be tracked, or impelled by machinery, through canals at low velocities, should be built as sharp in their bottoms as circumstances will admit of, although this must necessarily increase their draught of water; the second inference is, that whenever vessels are intended to move in canals with a higher rate of speed than 6 miles per hour, the general form of the bottom should be nearly quite flat.

ITHACA AND OWEGO RAILROAD.—The following account of the Ithaca and Owego Railroad has been furnished us by a friend, who will please accept our thanks for his politeness. We are indeed gratified to learn that this road is in operation, as it will, beyond all question, dispel unfounded prejudices, and produce a proper spirit and feeling among those whose interests will be most promoted by their general introduction:

COMPLETION OF THE RAILROAD.—In pursuance of arrangements to that effect, as announced in our last, the first grand experiment on the Ithaca and Owego Railroad, was made on Monday of this week. At 9 o'clock in the morning, between fifty and sixty cars, each drawn by two horses, and loaded with salt, plaster, and passengers, left the head of the plane for Owego. The train was led by three pleasure cars, filled with passengers,—among whom were the president and a part of the directors of the railroad company, the engineer-in-chief, the assistant engineers, the superintendents of carpentry and masonry, a part of

the directors of the Bank of Ithaca, and several other gentlemen of high standing and respectability from Tompkins county. Thus arranged, and accompanied by a first-rate band of music, they proceeded to within about three miles of Owego, where they were met by four cars, filled with citizens from that and some of the neighboring towns, among whom were the members of the board of directors from that village, the officers of the corporation, the clergy, &c., as also the Owego band. As the cars approached each other, three hearty cheers went forth from the party from Owego, which in the same flow of good feeling was almost immediately responded to. After a few moments delay, the united train was again put in motion, and as it came in view from the bridge, one mile from the village, a field piece that had been placed there for the purpose, was discharged as a signal of its approach, which was immediately re-echoed by another from the village. On passing the park, in front of the academy, and whilst rounding the curve to come into Front street, one of the grandest spectacles presented, we do not hesitate to say, that has ever been witnessed in this section of the state, and we had almost said in our country. The streets, on either side of the park, presented one dense mass of admiring spectators, who had congregated from the neighboring towns and counties, whilst the doors and windows of the academy, the court-house, and the private dwellings, on the right hand and on the left, gave fair evidence of the "hearty welcome" that responded from every bosom. It was under these peculiarly gratifying circumstances that the cars, in regular succession, and at short intervals, rolled through our streets until they arrived in front of the hotel,—whilst the roaring of cannon, the ringing of bells, the waving of flags, the exhilarating music from two excellent bands, and the loud and oft-repeated huzzas of the multitude, produced an animation that brightened every countenance, and gladdened every heart. The scene was novel and interesting beyond description, and the reader must draw largely upon his imagination in order to have any thing like correct conclusions as to the high and universal gratification which prevailed.

About 3 o'clock, the company sat down to an excellent dinner, prepared by Mr. Manning, at the hotel. L. A. Burrows, Esq., presided at the table, assisted by T. Farrington, and S. B. Leonard, as vice-presidents. After the cloth was removed, several appropriate sentiments were given, some of which we give below. Judge Bloodgood, President of the Railroad Company, being called upon, rose and delivered a very appropriate address, and closed by offering a sentiment; but the committee had not been able to obtain a copy for publication when our paper went to press.

TOASTS.

1. The Ithaca and Owego Railroad. We hail its completion as a matrimonial alliance between the waters of the Cayuga Lake and the Susquehanna River; may its progeny be prosperity to the surrounding country, and a rich return to the enterprising individuals who have projected and accomplished the work.

2. Individual enterprise. It has erected a monument in this part of Western New-

York, which justly excites the pride of our citizens.

3. The Erie Canal, and New-York and Erie Railroad. The same liberality and foresight which hastened the completion of the one, will overcome the obstacles and prejudices which retard the construction of the other.

4. The Southern Tier of Counties. They have borne their share in the burthens of internal improvements. It is just that they should share in its benefits, by an extension of the system.

5. The State of New-York. Indebted to Nature for its advantages, and to its Citizens for the improvement of them.

6. Our Neighbor, and Rival in Internal Improvements—the Commonwealth of Pennsylvania. A timely exercise of sound policy on the part of New-York, will prevent a large slice of the Empire State from passing into the hands of Simon Snyder.

7. The Cayuga Lake has long courted the Susquehanna River. To-day we celebrate their wedding.

8. The President and Directors of the Ithaca and Owego Railroad Company. Their persevering and successful efforts entitle them to our gratitude.

9. Ithaca and Owego. Prosperity to the one is prosperity to the other.

10. The Stockholders of the Ithaca and Owego Railroad. May the revenues of the road enable them to sing to the tune of money in both pockets.

11. The memory of De Witt Clinton. He was the efficient friend and the able and eloquent advocate of internal improvements.

12. The constituted authorities of the State of New-York, and of the United States.

13. The New-York and Erie Railroad. Its construction no otherwise inexpedient or impracticable, than was the construction of the Erie Canal. The objections to both have the same foundation,—error. But a wise man has said, "error may be tolerated, when reason is left free to combat it."

Volunteers.—By N. Randall. John Randel, Jr., Engineer-in-Chief of the Ithaca and Owego Railroad. To his profound skill, and untiring perseverance, are the people of Owego indebted for their present celebration.

By John Randel, Esq. The Citizens of Owego. May all their future intercourse with the citizens of their sister village of Ithaca, be as happy and joyful as the intercourse of to-day.

By Wm. R. Collins. Richard V. De Witt, Treasurer of the Ithaca and Owego Railroad—the main spring of the work.

By J. S. Beebe. The Ithaca and Owego Railway. The true way to unite the interests, and promote the prosperity of the villages of Ithaca and Owego.

By D. C. Woodcock. John Randel, Esq., Chief Engineer of the Railroad. His character as a man of science, is well attested by the beauty and excellence of the work which he has just completed, and has heretofore been abundantly established by a verdict of \$226,000.

By Henry Ackley. The Ithaca and Owego Railroad Company, and Susquehanna and Cayuga Banks. May the former remove the deposits of the latter to the tune of ten per cent. profit.

By T. Farrington, Esq. The Engineer-in-Chief, the Assistant Engineers, Superintendents and workmen on the Ithaca and Owego Railroad.

By Samuel Crittendon. The matrimonial connection between the Cayuga Lake and Susquehanna River. May it multiply and increase abundantly.

* Referring to a verdict recently obtained by Mr. R. against the Chesapeake and Delaware Canal Company.

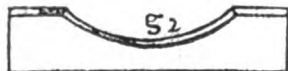
On the Currents of the Ocean. By G. K. O. To the Editor of the Mechanics' Magazine, and Register of Inventions and Improvements.

SIR,—I have lately read the dissertation on

G. B. Palmer's Gold Washing Machine. By J. STICKNEY. To the Editor of the *Mechanics' Magazine*.

DEAR SIR,—Accompanying this rude sketch of a Gold-Washing Machine I also send you a few remarks, which, from various circumstances, will of necessity be still more crude and hasty.

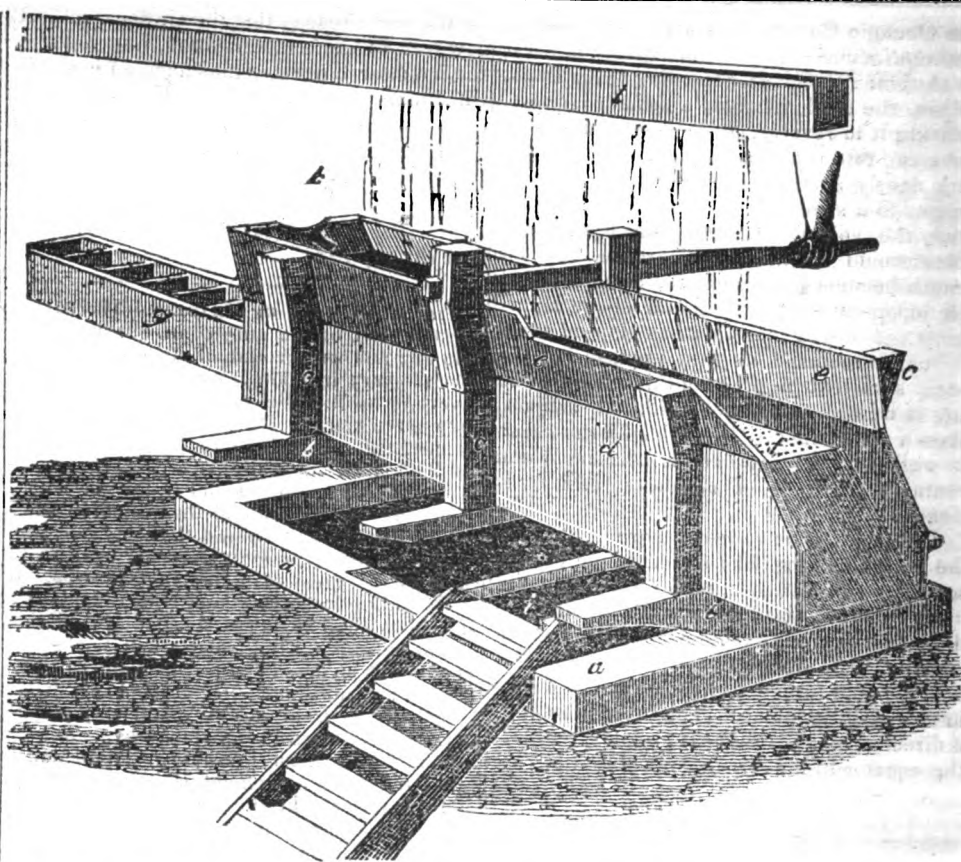
REFERENCES.—*a a*, parts of a horizontal frame, 5 feet long, 3 wide; *b b*, rockers supporting the trunk of the machine; *c c c*, posts inclosing the trunk; *d*, trunk in which the rippler is secured, 7 feet long; *e e*, sloping sides of the box; *f*, cast iron plates, 5 feet long, 15 inches wide; *g*, the rippler, partly drawn out; *h*, outside rippler, stationary; *i*, box, conveying the water to the outside rippler; *k*, the head, or feeding place; *l*, water conductor. The rockers are shod, and stand on plates of iron; a bolt fixed in the sill passes into a hole in the centre of each, to keep them from slipping. The sill of the centre frame, (to which is fastened the handle,) continues beyond the post, and, when the machine is in operation, beats upon two irons on the lower frame, to give motion to its contents. When washing, the rippler is locked up in the body of the trunk, and not seen; the true form of its partitions is seen



at *g 2*. The machine is "fed" at *k*, and the stones, &c. discharged at the sloping end; the gold and sand having passed through the plate, *f*, into the rippler which contains mercury, if any gold escapes the first ripple it is supposed to be caught in the one outside.

The gold mines of this country may be divided into those of *vein*, *surface*, and *deposit*. The first have a great diversity of appearance; in some of them the gold is imbedded in pure white quartz rock, and often visible to the naked eye. Of this kind is at least one vein at Carroll county, Georgia. Others in white and red sand stone, (the King's Mountain mine possesses masses of pure white stone, which is so friable as to crumble to fine sand between the fingers;) some in sulphuret of iron, in different stages of decomposition, (of this kind is an extensive vein at Narcocochly Valley, in Georgia;) others in the oxides of iron, or ochres. Sometimes it appears in dark spongy masses, the gold tipping the edges, and points of the structure in such manner as to resemble the small flowers of lichens. In some mines a dark, porous, and vitrious substance is exhibited, impressing the idea that the mass had been suddenly cooled when in extreme fusion. In one specimen from South Carolina the gold is disseminated in small particles through a rock, resembling fine variegated marble; as it does not contain lime, I presume it a species of slate. Another, which I obtained at the celebrated Duncan vein, (No. 1052 of the Georgia Lottery,) has particles of rich gold embedded in strata of slate, or rather of slaty structure, unctuous, of pearly lustre, and somewhat resembling stratite.

These veins are of various widths, from a few inches to that of several feet, but I believe little is known as yet respecting their length or depth. They are usually inclined upon one side, or are said to dip, the angle of which varies from that of nearly a vertical position, to more than 45°.



In places where the soil has been washed from the sides of hills, these veins of quartz, of various sizes, are seen traversing the micaceous slate, or gneiss, and, as it may be presumed that some of these small as well as large ones contain gold, it may not be unreasonable to account for the *surface* and *deposit* mines, by supposing it to be disintegrated from its natural bed by the effects of frosts, atmosphere, water, &c. Veins thus broken down, and the gold disengaged, will constitute what is called a *surface mine*; one of this kind before the door of a neighboring dwelling is now being operated upon, worth from two to three dollars per hand, per day, which has been trodden under foot for thirty years. From these *surface mines* the gold (being assisted by every shower that forms a rill) finds its way to the beds of the streams, and is deposited as soon as the gravity of each particle overcomes the force by which it is impelled forward; being heavier than other substances, and by the constant changing of the beds of the streams, and other causes, it finds the lowest situation in the deposit, that is, next to the slate, which arrests its downward progress. Next in specific gravity is the quartz and iron rocks, which are also found resting on the slate, and are covered by various strata of other soils, from the depth of from one to thirty feet; and as the constant deposition of gold may be supposed to be going on by fresh accumulations from the surface, and particles disengaged from fragments of rocks by attrition, in their way downward, and as the progress of these *particles* is in some degree impeded by the firmness of this quartz strata, we are enabled to account for their being diffused through this mass generally.

I should not thus gravely attempt to account for "*gold in deposit*," was it not that we have philosophers who assert that it *grows*—that new creations of the precious metal are afforded "day by day;" and oth-

ers, that those streams *were its natal beds*, and it has remained here since the creation; while others say that an eruption of the mountains at some distant period had ejected forth a golden shower, of which we are now reaping the harvest.

The first object of the operator on a *deposit* mine is to ascertain its value, for which purpose he usually proceeds in the following manner: He finds the depth of the "grit," or quartz deposit, by forcing down a slender iron rod. If not too deep, he excavates the soil in pits or ditches. When reaching the grit he washes a small quantity, and proceeding through that strata to the slate, tries it again by washing, and if from these results in several places he forms a favorable opinion, he sets about preparing the mine by cutting ditches for the streams, and others for draining the mine, which sometimes are necessary to be twelve or fourteen feet deep, and of great length. His supply of water for washing must be brought in in small canals six or eight feet above the surface of the mine, and often times the fountain must be sought a mile or two from the place of operation. The next thing is to place his machine, or rockers, where they will be most convenient for the plan of his future operations; he then clears a pit ten feet wide, and from ten to one hundred and fifty yards in length. As soon, however, as a portion of the grit is laid bare, a number of the hands are employed in raising, and others in wheeling it in barrows to the machine, where one is employed to fill it, one to move it, one to cast away the cocks when washed, and perhaps another to keep the outside rippler clear from sand. The grit being placed in the machine, (which in some respects resembles a family cradle,) and agitated from side to side under the streams of falling water, washes the gold and sand through the cast iron plates into the inside rippler containing mercury, where, by

the strong affinity or attraction which exists between the mercury and the gold, the latter is secured, while the sand is washed away. When the day's work is finished the rippler is drawn out, the gold in amalgam washed and secured, and the mercury expelled by heat. It is then sent to the refiners, where all foreign substances (silver excepted) are destroyed by the different agents employed in this fluxes, and (if correctly refined) valued accordingly, the quantity of silver in different mines is supposed to vary from two to forty per cent.

Machines of various constructions have been used in collecting the gold, but the one here represented has mostly taken the place of all others among regular miners. It was invented and patented about three years since by Mr. G. B. Palmer, of Spartanburgh, South Carolina, whose experience in mining enabled him to embrace in this simple form every requisite principle for effectually collecting the fine as well as coarse particles of gold. His price for rights amounts to a mere compensation for his expense and labor in perfecting his improvement.

We fear that the richest mines in this vicinity are mostly wrought out, and that we shall soon begin to feel the effects of the "removal of the deposits."

Most respectfully, yours, &c.

J. STICKNEY.

AGRICULTURE, &c.

CULTIVATION OF BARLEY.—Although this grain is of very considerable importance, yet we are inclined to think that the apple, the grape, and other fruit, from which liquids are obtained, will prevent a great increase of barley culture. For most of the following information we are indebted to Goodsell's Genesee Farmer.

More than two-thirds of the barley raised in the United States is the produce of this state, and this is almost wholly grown in the northern and western parts. The quantity marketed at Albany and its neighborhood, in 1893, is stated at 450,000 bushels. This, estimated at seventy-five cents a bushel, makes an aggregate of \$37,500 dollars.

Barley, as a field crop, has been cultivated from time immemorial. It is not known of what country it is a native, nor at what time it was first cultivated. At this time it is much more extensively cultivated in England than it is in this country. Few crops require more care in the cultivation, or are more apt to disappoint the cultivator in all the good wheat growing districts in the United States, than barley.

There are six species of barley at present cultivated in England, viz.:

Spring or Summer Barley.—There are two varieties of this species, but the one commonly cultivated (*H. vulgare*) may be distinguished from the Siberian barley by the heads being much larger, and, as well as beards, arranged in double rows, whereas the other is single, which the heads appear flat. This is considered the best kind of barley for malting, as the husk is light.

Winter Barley.—There are three kinds of winter barley which are at present cultivated for profit, besides two or three species and varieties that are cultivated as matters of curiosity.

The common or long eared Barley (*H. distichon*) is perhaps cultivated more than both the other species. Both heads, and awns, or beards, of this kind, are much longer than those of other kinds of winter barley. The heads of this kind are flat.

Square Winter Barley.—The heads of this kind, though not as long as the foregoing, are much thicker and have the appearance of being square, the grains being arranged in four distinct rows. This is accounted a harder species than the long eared, and not as subject to be injured by the winter.

Big or Barley big.—This species has large square heads, with grains arranged in six rows, and is cultivated on account of its being earlier than the common or square barley. It is not valued so high for malting as either the other two varieties mentioned.

If the different kinds are mixed they will not command as good prices from the brewer, on account of requiring different lengths of time in malting. The loss in this way last year is stated at ten per cent. upon the whole product, or equal to 45,000 bushels.

Soil and Climate.—Barley succeeds best in a cool damp climate, and there upon a fine warm sandy loam; but where the climate is warm, and dry, as in most of New-York, a loose soil, rather moist than dry, produces the best-crops.

The best crops of barley grown in the state of New-York are upon a high range of table land on the north side of the Mohawk river, near Fairfield. From the elevation of this range of land, it is too cool to produce either corn or wheat, unless when the seasons are usually favorable, but it produces barley in great perfection. It does better upon corn than wheat soils. It may be sown upon a clover ley, or after a hoed crop, which has been well manured; but recent manure should by no means be applied to the barley, as it induces a rank growth, and causes the grain to lodge. When the plants are three or four inches out of ground, the roller may be passed over the field with great advantage. By often burying the crown it causes the grain to tiller, or multiply its seed stalks, and causes a beneficial compactness to the soil. It should be sown upon the fresh ploughed soil, and well harrowed in. Grass seeds may be sown with this crop to advantage.

In preparing lands for winter barley, the course taken is the same as in preparing for wheat, and the sowing done in the same manner, but there should be twice as much seed sown upon an acre as of wheat.

The seed for light should come from strong land, otherwise it degenerates in bulk and fullness. A change of seed is more important in this than in most other grain. The best seed for sowing is that which is free from blackness at the tail, and is of a pale yellow color, intermixed with a bright whitish cast; and if the rind be a little shrivelled, it is so much the better, as it shows that it has sweated in the mow, and is a sure indication that its coat is thin.

Fresh stable manure should never be used upon land to be sown with barley, as it will generally be found to do more hurt than good. Lands for barley should always, where the soil will allow of it, be ploughed deep, and after seeding, the process should be finished with the roller. There is not a crop raised where the use of this implement is more important. By examining the plant, it will be seen at once that it is not well calculated to stand the drought, as the roots are small and do not penetrate deep, and it has a great proportion of broad, thin foliage.

Summer barley should be sown about the same time as oats, and lands capable of producing good crops of the one will be found suitable for the other.

From the great quantity of foliage produced by winter barley, when sown early in the fall, in countries where the snows lie deep and long, it is found advantageous to feed it with calves or sheep previous to the setting in of winter, to prevent it from moulding.

Harvest Management.—There is more care required in the management of this than any other crop raised upon a farm. If cut too soon, it will be found very difficult to separate the

awns, or beards, unless thrashed in a machine; if allowed to stand too long, the ears are apt to break off at the bend of the straw near the head. If cut green, and suffered to remain upon the ground, to render the awns brittle, through rain storms, many of the grains will vegetate, which renders them of little worth for malting. Where farmers are provided with thrashing machines, the better way is to allow barley to stand until fully ripe, then cut it with a scythe, and let it remain upon the ground a day or two, if the weather is favorable, then take it directly to the machine, and thrash and clean it.

The quantity of barley produced per acre is quite variable. We have sowed good lands, that did not produce more than twelve bushels; and we have seen upon lands that were no better in quality, nor better prepared, crops that would average fifty bushels, much depending upon climate for its perfection. In England the average produce is allowed to be about twenty-eight bushels per acre.

From the uncertainty of the crop, barley is cultivated but little for any other purpose but malting for beer, so that the market price will depend upon the distance at which the crop is raised from a brewing establishment.

In some parts of Europe barley is extensively used for making bread; but in this country, where, in most parts, a bushel of wheat may be raised as cheap as a bushel of barley, it is not likely to come into use as an article of food.

STRAW WEAVING.—We had the pleasure, a few days since, of witnessing the operation of weaving straw for the manufacture of bonnets, at the establishment in this town, under the direction of Mr. J. P. Golding. There are now employed in this establishment upwards of 100 females, all engaged in weaving the straw into plaits or webs of about two inches in width. The variety of patterns is large, many of them very beautiful. In some the common rye straw of this country is interwoven with the Tuscan straw. The web or warp into which the straw is woven is composed of silk doubled and twisted from the cocoons very fine, but yet sufficiently strong for the purpose. This silk is prepared, as we are informed by Mr. G., by a son of his, who is located in Mansfield, Conn. where for several years past a considerable quantity of silk has been produced. Mr. Golding was formerly a silk weaver in Manchester, England, and his family understood the culture of the worm, the manufacture and weaving of silk, and are said to be in the exclusive possession of this information in this country. Mr. Golding has already invented machinery and woven several patterns of silk vesting and webbing in this country, but at present this part of the business cannot be profitably carried on here. He intends, however, to prosecute the business, and has set out trees for that purpose at Dedham.

We have no doubt that the production and manufacture of silk will become a very important branch of American industry, as many millions of dollars are annually paid for the imported article. We have yet much to learn, but a few years will put the country in full possession of all the necessary information for carrying on successfully every branch of silk manufacture.

We notice by the papers that some silk handkerchiefs have been manufactured in Dayton, Ohio, under the superintendence of Daniel Roe, Esq. the produce of the native mulberry. Their color is the natural color of the silk, and they appear to be a very durable article.—[Bunker Hill Aurora.]

To preserve Cheese.—If you have a greater quantity of cheeses in the house than is likely to be soon used, cover them carefully with paper, fastened on with flour paste, so as to exclude the air. In this way they may be kept from insects for years. They should be kept in a dry, cool place.

COLUMBIAN STRAW CUTTER.—Noah Davis, of York, Livingston county, has exhibited a machine in this village denominated the Columbian Straw Cutter, patented to Amos Russell and himself on the 19th of November last.

Several hundred people examined the principles of the machine, and saw it operate in cutting straw, hay, &c., and almost without a dissenting voice pronounced it the best machine for cutting fodder that they had ever seen.

That the public may have some idea of this machine, a partial description of it is given:

Three knives (more or less,) say twenty inches in length, are placed upon a cylinder diagonally, by means of screws—the cylinder is about 20 inches in length by 28 in diameter, which is placed on a frame in the manner usual for hanging a grindstone—on a bar of wood, across the rear of the frame, is placed a thin plate of steel, upon which hay, straw, stalks, or oats in the sheaf, are cut by the passing knives, which come in so perfect, though tight contact with the steel, as not to admit of the thinnest leaf of straw, though alone, to escape uncut. The straw, &c., is carried to the cutting point in the manner that wool is fed into a machine for carding.

The cut may be altered to any length required in three seconds of time, from one-fifth of an inch to an inch or more. A hopper is also placed upright over the summit where straw, &c. is cut, similar to that already described, but is not considered any better, except for cutting ears of corn to short pieces, say half an inch or an inch, which it will do square across the cob at the rate of about a bushel of ears in a minute.

And as people generally suppose this must be hard hand labor, it may be observed that as the cylinder is large, and covered with three inch heavy staves, it not only supercedes the necessity of a fly-wheel, but gives power at the point required, and the knives being placed spirally on the cylinder, and under quick motion, the corn may be cut as above stated by the power of two fingers. All fodder cut is carried into a box beneath.

The knives, by means of the screws which attach them to the cylinder, are set more or less close to the bed shire or steel, almost as easy as the length of the cut is regulated.

To shift from hand to any other power, nothing is necessary but to attach a band or belt to a pulley placed on the end of the shaft instead of a crank.

Any person wishing to take an interest in this improvement, may have a shop, town, county, or state right, on reasonable terms, by applying to Noah Davis, of York, or may have town or county rights by applying to Thomas Williams, of Waterloo, or Philander Denslow, or George W. Huntoon, of Syracuse, Onondago co., his agents.

The machines will be manufactured by Joseph Hall, in Rochester, of whom they may be had on short notice.

Printers who are in favor of agricultural improvements are invited to insert the above. [Genesee Farmer.]

SALSIFY OR VEGETABLE OYSTERS, *Tragopogon porifolius*.—This plant, which is known by the several names of salsify, vegetable oyster, and goat's beard, is often confounded with that of the *scorzonera hispanica*, garden scorzonera or viper's grass.

The salsify is a deciduous, herbaceous, bien-

nial plant, with a long, tapering, white root; sarsnip shaped, with a white milky juice, and mild sweetish flavor. It has long been cultivated in gardens, for the sake of the roots, which, when cooked, have much the flavor of oysters.

The leaves of the plant somewhat resemble those of the leek, being smooth, green, and pointed. The second year the seed stalk rises three or four feet high, producing flowers of a dull purple color, which are followed by seeds, surmounted by a crown of downy substance, somewhat resembling the common thistle.

Were the valuable properties of this plant more known, it would be more extensively cultivated in gardens, particularly in the inland parts of this country.

It is thought impossible, by many, that a plant should be cultivated which should bear any resemblance, in flavor, to oysters; but all who have tasted salsify, when properly cooked, must not only acknowledge that there is a resemblance, but that this root is a good substitute for the marine production.

The manner of cultivation is precisely the same as that of parsnips; and roots which are not wanted for fall and winter use, may be allowed to stand in the ground in the same manner for spring use.

They are cooked in all the different ways as oysters. When they are intended to be fried in butter, they should be first parboiled, the skin taken off and sliced; the same for stewing, or they may be mashed. They impart a fine flavor to the stuffing for fowls.

There is an annual plant, which belongs to the same class with the salsify, and which very much resembles it, both in leaf and seed, the seeds of which are, sometimes, through design or mistake, sold for salsify seed. It is the *Geropogon glaber*, or old man's beard. It is not worth cultivating.

Scorzonera, or *Viper's Grass*, also belongs to the same class with salsify, but is a perennial plant, with a deciduous, herbaceous top, which grows to about the same height as salsify, but has yellow flowers, which are followed by seeds not unlike those of salsify. The root bears a resemblance also, but is not counted as profitable. The leaf of *Scorzonera* somewhat resembles that of the plantain.

TRANSPLANTING RUTA BAGA.—Mead Atwater, of Brighton, has called at the office, and communicated to us, verbally, his success in cultivating the Ruta-baga the past season.

Mr. Atwater informs us that he sowed the seed about the middle of June, on seed beds, and when the plants were a suitable size, transplanted them out at suitable distances. The plants were afterwards hoed, and kept clear from weeds. At the proper season for harvesting he went over the ground with a sharp garden hoe, and struck off the tops which he afterwards gathered up with a rake. He then with a dull hoe pulled the turnips out of the ground. The produce he thought was at least one thousand bushels per acre, and the quality as fine or finer than those which had been allowed to stand where they were sowed.

Mr. Atwater expressed himself in favor of transplanting, instead of sowing the seed where they were to grow, for the following reasons: that it saved once hoeing, which he thought more labor than to transplant them. That the ground might be ploughed at the time of setting, and would continue in better condition for maturing the crop than when ploughed earlier in the season.—[Goodsell's Farmer.]

NEW MODE OF SELECTING SEED CORN.—Mr. Solomon Thayer, of New Braintree, Mass., has left in the office of the N. E. Farmer, several ears of Indian corn, which are remarkable for a property in which common corn is often deficient. The small ends of the ear are filled completely out, quite to the extremity, with sound kernels of good size, instead of an inch or two, more or less, of small imperfect kernels, or barren cob, as is often the case, in the product of

our corn fields. This was effected by Mr. Thayer, by selecting for seed for several years in succession, kernels which grew at the tip of the ear; and as like not only produces its like but improves its likeness, these top-end kernels being planted, produced two or three more ears to a stalk, which were filled, and the ends rounded off with sound corn of larger size than top-end kernels usually are.

We doubt, however, whether these ears are as large as if the largest kernels had been planted. Some cultivators think they have derived advantage by selecting their seed corn exclusively from the largest end of the ear. They tell us that "the nearer the seed is taken from the butt-end the larger will be the ears." Perhaps Mr. Thayer might improve on his praiseworthy experiment by selecting seed corn for two or three years from the large end of his improved ears; and then plant a while from the middle. Dr. Deane, directed in shelling seed corn, to select about an inch from each end of the corn, planting the middle only. But experiments are of more weight than authority in the scale of improvement.—[N. E. Farmer.]

PLANTING CORN.—Although the following experiments are on a small scale, yet they are deserving the attention of the farmer. The article is from the Long-Island Star.

Having made some little experiment in planting corn, I have concluded to relate my doings, and give the result. Six years ago, I planted eight and a half square rods of corn, two feet in width one way, and one foot the other, and one grain in a hill. The result was, I had eleven bushels of ears, making at the rate of 207 bushels to the acre, which I conclude is nearly double that which it would have brought by being planted in the ordinary way. The land was not first rate, tolerably good, and a sprinkling of coarse dung ploughed in.

I last spring planted three-quarters of an acre, three feet three inches in width one way, and about two feet four inches the other way, and put three grains in a hill: there were on the ground about fifty young apple trees, which had been planted three years, and two large pear trees, and I planted four rows of potatoes and a patch of vines, and I conclude that fifteen square rods will not overrate the deduction which ought to be made—that leaves 163 square rods. The result was, I had 82 bushels of ears of corn, which is at the rate of about 125 bushels to the acre; if it had been planted in the common way. I think it would have fell short of producing 100 bushels to the acre.

And I planted half a square rod one and a half feet apart each way, one grain in a hill, seventy-two grains. After it was up, I sprinkled between three and four quarts of unleached ashes on it, having heard say that it was of great advantage to the crop to break off the suckers or scions, which I did to one-half of it twice or thrice. I thought that which I suckered did not look quite so healthy as the other; however, there was little difference. When I gathered, the result was this: I had from the part that was suckered forty-eight ears, weighing sixteen and three-quarters lbs., filling a half bushel, rounding it over; from the other part I had forty-four ears, weighing eighteen and three-quarters lbs. measure, about the same as above. Some days after, I shelled the whole together, and had exactly half a bushel—this is producing at the rate of 160 bushels of corn to the acre, or 320 bushels of ears; the last is as large an increase as ever I recollect hearing of. From these small experiments, I have ascertained to my satisfaction, that a piece of ground will produce the most corn by planting one grain in a hill; as to the width, I have not got exactly, but I venture to say it should not be more than two feet, nor less than one and a half feet apart. I should take one foot nine inches.

Of ploughing and harrowing corn, I am about to say a word in favor of the harrow, although I know that in these days it amounts

almost to heresy. In the first place, I allow that where people do but little work in the corn, they had better do it with the plough; but to put it in good order, I think it can be done better with both, than with either plough or harrow separately, for you may harrow corn before it will answer to plough; then every time after ploughing, let it lay a few days, and go through it once in a row with the harrow; it will then keep clean longer, and be in better order to plough again. In my opinion, people in general ought to plough as much as they do, and make use of the harrow some too, and their corn ground would be in better order than it commonly is.

STEAM-DIGGING MACHINE.—M. Wronski, a celebrated mathematician at Paris, has, according to the Paris papers, discovered a new system of applying steam to carriages, digging machines, hoes, picks, ploughs, &c. so superior to any thing hitherto known, that a French company has bought his patent for four millions of francs.—[Le Temps.]

PEAS.—Farmers of Great Britain have ascertained, by many years' experience, that no other fallow crops leave the ground in a situation so favorable for a crop of wheat, as leguminous vegetables. At the head of this class may be ranked the pea. "To fallow, and at the same time, to have a shading and ameliorating mild crop growing on the fallow," is the system pursued by the best farmers of that country.

Lime in the soil is considered indispensable to produce this pulse in perfection, and where it does not exist in sufficient quantity, the application of gypsum will be found very beneficial. Nearly all our western lands contain a portion of calcareous matter, which is evidenced by the abundant crops of wheat. As far as my experience goes, no other crop so effectually subdues and pulverizes a heavy clay soil, as peas. On such soil, fall ploughing is necessary. Early in the spring roll and harrow, then sow two and a half to three bushels of peas per acre, and cover with the cultivator. When the crop comes off, the ground will be found remarkably mellow, and once ploughing will put it in fine condition to receive wheat.

By this management, I have raised twenty bushels of peas per acre, and my wheat on the pea ground was the heaviest on my farm. In England it is not uncommon for a large farmer to have 50 acres of peas, and they find them the most valuable crop for several kinds of stock. Some farmers may say they cannot raise Indian corn in England, and are compelled to fatten their swine with peas. To such I would remark, that a bushel of peas is worth more than one of corn, to bring hogs forward early in the season, and is raised with half the labor. I begin to feed my hogs with peas as soon as they are too old for the table, and find that all is greedily devoured but the straw. I never had hogs to thrive so rapidly on any other kind of food. Corn is indispensable in the latter part of the season to give solidity to pork, but if we were to plant less corn, and sow more peas, we should be gainers by the change.

A celebrated writer on agriculture says, "A crop of peas is so far from exhausting the land, that it may be considered as an excellent and ameliorating manure." Another writer says, "Various crops pulverize the soil, and to a great extent prepare it for different crops. Peas, for instance, are peculiarly calculated for preparing the ground for wheat."

The bug (*Bruchus pisi*) punctures the pod when very young, and deposits an egg. Very few crops escape them, except such as are sowed after the 10th of 6th month (June.) It will therefore be best for every farmer to sow a part after that time for seed, or to keep a sufficient quantity over one year. The last method I have found effectual. If, however, the farmer cannot procure seed clear of bugs, let him heat water in a large kettle, and dip the

basket containing the seed into the water when in a boiling state; keep them in *not more than one minute*, then throw them on a floor and strew on plaster.

I have sowed the small yellow pea, and the marrowfat, but if I could obtain them in sufficient quantity, I should much prefer *Bishop's new early dwarf prolific pea*, which I have found in my garden to be the most prolific variety. It seldom attains a height of more than twelve to fourteen inches, and is of fine flavor. When in blossom they present a beautiful appearance.—[Genesee Farmer.]

IMPROVING SEEDS.—I heard him tell Col. Williams that day that he was born on a farm, and lived on one all his life, and that he was then, I think he said, near 80 years of age. I knew him about twenty years before his death, and knew him to be a skilful farmer, and a very industrious man. In his long life he tried a great many experiments in farming and gardening with success. He advanced some new ideas respecting seeds, &c. [See Dr. Darwin's *Phytologia*, Dublin edition, printed in the year 1800, page 410.]

"He believed that no kind of incest would degenerate the breeds of vegetables," &c. And further, "Mr. Cooper was led to his present practice, which he begun more than forty years ago, by observing that vegetables of all kinds were very subject to change with respect to the time of their coming to maturity, and other properties, but that the best seeds *never failed* to produce the best plants. Among a great number of experiments he particularly mentions the following:

"About the year 1746, his father procured seeds of the long watery squash, and though they have been used on the farm ever since that time without any change, they are at this time better than they were at first."

"His early peas he procured from London in the year 1756, and though they have been planted on the same place every season, they have been so far from degenerating, that they are preferable to what they were then. The seeds of asparagus he had from New-York, in 1752, and though they have been planted in the same manner, the plants are greatly improved."

P. S.—Joseph Cooper: As some persons may be sceptical, with respect to his seeds not only continuing their good qualities, but increasing in goodness, I will here relate what I saw him practice. He generally sowed every spring from about five to six acres of early peas, and in gathering his peas for sale, he always reserved a number of rows for seed, and he would not permit any one to touch these rows, and he made it a point to gather those first ripe on those rows for his seed pens. The consequence was, that he generally had the earliest peas in the market of Philadelphia, and mostly got for the first gathered a dollar and a half for a peck, and by the time they came down to two dollars a bushel, his were always disposed of. He never sowed more than one kind.—[Genesee Farmer.]

THE LOCUSTS.—It appears that the seventeen-year Locusts (*Vicidae septemdecim*) are to pay their periodical visit this year. It has been ascertained that the insect appears, periodically, once in seventeen years, and in the spring of the year. They were observed in this country at the stated intervals from 1749 to 1817. Apprehensions are expressed that they will commit great ravages, and it is asserted that more than once, when they

visited some parts of New England, they not only ate up all the grass in the fields, but actually attacked *clothing* and *fences* to appease their insatiable hunger. But the *Encyclopædia Americana* informs us that they are in no way injurious to vegetation, except from the damage done by the female in depositing her eggs—while the insect is itself the favorite food of various animals, and in this way may be turned to good account. Hogs devour them eagerly, and some of the larger birds are fond of them. The Indians consider them a delicate food when fried. In New-Jersey they have been converted into soap.

In various parts of the world, from time immemorial, these insects have been used as food for human beings. For this purpose, in some countries, they are caught in nets, and when a sufficient number is procured, they are roasted over a slow fire, in an earthen vessel, till the wings and legs drop from them; when thus prepared they are said to taste like craw-fish. The locust constituted a common food among the Jews, and Moses (Levit. xi. v. 22) has specified the different kinds which they were permitted to eat.

It has been disputed, however, whether the food of John the Baptist, in the wilderness, was the insect locust, or a fruit of the same name.

TOBACCO FOR TICKS.—We should suppose the tobacco wash, in the following recommendation from the N. E. Farmer, should also be applied at the time of shearing:

Boil a small quantity of tobacco, perhaps what grows on one good thrifty stalk would be enough for half a dozen sheep, in so much water, as when it is sufficiently boiled, there shall be two or three gallons of the liquor; let it become sufficiently cool, then open the wool along the centre of the neck and back of the sheep, and with a bunch of tow or some other spongy substance put on the decoction until the skin becomes thoroughly moistened therewith, and in a short time the ticks will all be destroyed, and the sheep instead of pulling out and wasting their wool by fruitless exertions of self-defence, will become easy and contented, and suffer their fleece to remain to be taken off by the shears.

For many years I have taken this method with my sheep, just before the time of their lambing, and have always found it to have the desired effect. I very much dislike the foolish practices of smoking, chewing, and snuffing this poisonous weed, at least when no better reason can be given for so doing than fashion or the force of habit; yet I annually raise a few plants for the benefit of my sheep, and would recommend to every one who keeps these useful animals to do the same.

DALE'S HYBRID TURNIP.—Mr. Allnatt, sen., has a moderate breadth of that new and valuable field turnip, Dale's hybrid, the bulb of which is said to be as solid and nourishing as a Swedish turnip, and as tender as an early Dutch. It is also said to be not in the least degree injured by the frost, and it is thought that it will prove to be invaluable for field produce in wet soils. The seed of this variety is also for Mr. Ronalds; and, if a fourth part of what we heard of this turnip be true, it must be a prize of immense value to the farmer.—[Loudon's Magazine.]

[The seeds of the above can be had of the seedsmen in New-York.]

TAR ON SHEEP.—If you are apprehensive lest foxes should take unwarrantable liberties with your lambs and geese, you will rub a little tar on their necks, and it is said neither foxes nor wolves will attack them, as those marauders cannot endure the odor of tar.]

NEW-YORK AMERICAN.

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LITERARY NOTICES.
No. XXI.*Galena, Upper Mississippi, Feb. 1.*

A furious squall of snow, which would have rendered it impossible to keep a given road in crossing the prairie, subsided before night fall, on the day that I left Boyd's Grove, bound for the Upper Mississippi; and as the calm clear sky of evening succeeded, our sleigh glided over the open plain at a rate which soon made the houses behind us disappear in the distance; while four fleet horses, with a good driver, and but one passenger, swiftly accomplished the short stage of 12 miles, and brought us to the room where we were to pass the night. The intervening prairie, for the first six miles, was high and level, with not a stick of timber—one broad snow covered plain, where you could see the dark figure of a wolf for miles off, as it stood in relief against the white unbroken surface. A prospect more bleak and lonely, when night is closing in, and you press toward some distant grove, whose tree tops cannot yet be discovered above the monotonous plains, is inconceivable. Presently, however, you come to a break in the prairie; a slight descent next shelters you somewhat from the wind, and now you can discover a wood, which hitherto had appeared many miles off—or, perhaps, was not perceptible at all—that has pushed a scattered clump of trees here and there, like an advanced guard under cover of the ravine. You come to the brink of another platform, and you are on the edge of a grove, while for 20 miles ahead the eye ranges over what looks like a shallow basin of immense extent, broken occasionally by dusky masses, which seem rather to repose upon than to spring out of its surface: such was the view in advance, from a point about six miles from Boyd's Grove. The elevation, from which we descended, was not more than 20 feet, and it commanded a prospect of as many miles. It was like looking from the edge of a snow covered desert upon a frozen lake, with its isles, headlands and scattered rocks, and its waters riveted as fast as they. The rosy rays of the setting sun still lingered over the scene, as on one they longed to set free from the icy chains which bound it, while the calm pale moon grew momentarily more bright, as if her cold beams borrowed lustre from the extent of pure white surface over which they shone.

A single room, miserably built of logs, the interstices of which were so unskillfully filled up with mud, that I could hear the night wind whistling through them as we drove up to the door—was to be our lodging for the night. A couple of rifles with a powder horn, and a pair of Indian blankets lay without, and two painted Potawatomies were crouched on the hearth, as I entered the cabin. One of them, a small but elegantly formed youth of twenty, sprang at once to his feet, while the other, a dark ill-looking negro-faced fellow, retained his squatting posture. They were dressed in complete suits of leather, both having their ears bored in several places, with long drops of silver pendant in thick bunches therefrom, while broad plates suspended over their chests, with armlets of the same metal, made quite a rich display. Their dress was, however, the only point in which they resembled each other; and the aquiline nose, keen eyes, and beautifully arched brows of the one, contrasted as strongly with the heavy inexpressive look and thick lips of the other, as did the closely fitting hunting frock of the first, which a black belt, sown thick with studs of brass, secured to his erect form, with the loose shirt that crumpled around the crouching person of the other. A thin featured gentleman, with long sandy hair, flowing from under a cap of wolf-skin, and dressed in a bright green capote with an orange colored sash—sat smoking a pipe on the other side of the fire place, while one foot dangled from the bed on which he had placed himself, and another, rested on a Spanish saddle, whose holsters were bro't so near to the fire as it lay thus carelessly thrown in a corner, that the brazen butts of a pair of heavy pistols were continually exposed to view by the flickering light. A pale, sickly-looking woman, with an infant in her arms, and two small children clinging

around her lap, sat in the centre, and completed the group. Her husband, and another hanger-on of the establishment, had stepped out to look after our horses, as we drove up to the door. The apartment, which was not more than twenty-five feet square, was cumbered up with four beds, and when I thought how many there were to occupy them, and observed a thin cotton curtain flapping against a wide unglazed opening, which formed the only window of this forlorn chamber, I thought that the prospect of comfortable accommodation for the night was anything but promising. Presently, however, the landlord entered with an armful of bur-oak and split hickory, which crackled and sputtered at a rate that made the Indians withdraw from the ashes. The good woman placed her child in a sort of cradle, and bestirred herself with activity and good-humor in getting supper; while the frontiers-man, knocking the ashes from his tomahawk pipe, passed me a flask of Ohio whiskey, which, after my cold ride, had all the virtue of Monongahela. Some coarse fried pork with a bowl of stewed hominy, hot rolls, and wild honey, did not then come amiss, especially when backed by a cup of capital coffee from the lower country: though the right good-will with which we all bent to this important business of eating did not prevent me from noticing the Frenchman-like particularity with which the Indians eat from but one dish at a time, though tasting every thing upon the table.

The best looking of the two, though daubed with paint to a degree that made him look perfectly savage, was almost the only Indian I had found yet who could talk English at all; and he seemed both amused and interested while I read over to him a slight vocabulary of words in his own language, as I had taken down the terms occasionally in my pocket-book, and was evidently gratified when I added to their number from his lips. He spoke the language, indeed, with a clearness and distinctness of enunciation such as I have only heard before from a female tongue; and the words thus pronounced had a delicacy and music in their sound entirely wanting in the usual slovenly utterance of Indians. You would have been struck, too, in the midst of our philological task, to see the grim-looking savage bend over and rock the cradle, as the shivering infant would commence crying behind us. In this way the evening passed rapidly enough; and then the good dame, with her husband and children, taking one bed, the green rider and I took each another, while the stage driver and remaining white man shared the fourth together. The Indians brought in their guns and blankets from without, and making a mattress of my buffalo skin, they placed their feet to the fire, and after a chirping conversation of a few minutes beneath their woollen toggery, sunk to slumber.

The moon was still shining brightly above, as I sallied out an hour before dawn to wash in the snow, and finish in the open air the toilet commenced in the crowded shantee. Our sleigh, a low clumsy pine box on a pair of ox runners, was soon after at the door, and covering up my extremities as well as I could in the wild-hay which filled the bottom, (for the morning was intensely cold,) I wound my fur robe around my head to keep my face from freezing, and soon found myself gliding at a prodigious rate over the smooth prairie. The sun was several hours high when we struck a fine grove of timber, through which the small but rapid river Huron takes its way, and thrashing through the wintry stream, we merely paused long enough at a shantee on the opposite side to adjust some of our harness which was broken while fording the torrent, and reached a comfortable log cabin, in which we breakfasted at noon. There was an Indian encampment within gun-shot of the house, and seeing a melancholy looking squaw with an infant in her arms, hanging about the farm house, I left my landlady turning some venison cutlets and grilled grouse, to see how the aborigines fared in this cold weather. A pretty Indian girl of fourteen, driving a couple of half starved ponies, indicated the camp of her friends. They proved to be a very inferior band, having but two hunters, and those inefficient looking fellows to a score of women and children. Sheer necessity had compelled them to encamp near the settlement; and a more squalid, miserable looking set of creatures I never beheld. The chief of the party, contrary to the usual Indian custom, had let his beard grow till it stood out in small tufts from every part of his sinister-looking smoke-dried face; and the thong of leather which sustained his scalping knife, seemed to answer the double purpose of binding the fragments of his greasy and tattered capote to his body, and of keeping the loosely

hung component parts of the body itself together.—A bluff faced English-looking white youth of 18, with a shock head of black curly hair, and wearing a hunting frock of some coarse material striped like a bed-ticking, secured to his body with a red belt, from which a hatchet was suspended, was assisting him spangling a refractory poney. The young gentleman, as I afterwards learnt, belonged to the tribe—some runaway apprentice, perhaps, who thought he was playing Rolla. The rest of the mongrel concern dodged like beavers beneath the mats of their smoky wigwags as I approached their common fire, to warm myself.

Returning to the farm-house, I found a little girl playing on the floor with several strings of beads, which the squaw first mentioned had just parted with to purchase food for her starving infant. The family, however, though they suffered the child to retain the ornaments, supplied the poor woman with food and comforts to ten times their value. The Indian mother, I was told, though nearly fainting from exhaustion, asked for nothing except for her child, and seemed deeply affected when after, by signs, apprising the whites of her situation, she obtained the required sustenance.

Upon emerging from this grove and getting out once more on the prairie, I could distinguish a solitary horseman followed by his dog, coming towards us, at least a mile off; and remarking that as they approached us the distance between the man and his canine companion increased at a very unusual rate, I was induced to scan the appearance of the latter as he passed within rifle shot of our sleigh after his master was out of hail. It proved to be an enormous wolf; and we actually tracked the fellow for eighteen miles, to a thick brake on the banks of a frozen stream, from which he had first leaped into the traveller's tracks, and steadily followed on in his horse's steps to the point where he passed us. The cowardly rascal being hard pushed with hunger, though he could have no idea of attacking the traveller by himself, had probably just trudged along mile after mile in the hope of raising a *posse comitatus* of his long haired brethren along the road, or of availing himself after nightfall of some accident that might overtake the horseman, who was so unconscious of his volunteer escort. Had the man but turned his horse and run the wolf a hundred yards, he would have rid himself of a companion that circumstances might possibly have rendered inconvenient.

It was late in the afternoon when we reached the banks of Rock river, whose broad and limpid current was of course congealed by the rigors of winter. The enterprising and intelligent settler from the city of New York, who, though repeatedly driven off by the Indians, has been for fifteen years established at "Dixon's ferry," detained me some time at dinner in expatiating upon the healthfulness of the adjacent country, and the abundance of fish and game of all kinds which frequent the waters of the fine stream upon which he resides. The river, which is navigable for boats of fifty tons nearly a hundred miles above the Mississippi, flows through a gentle valley with the prairie sloping to its edge upon either side, except when a group of bold rocks forming a cove, whose entrance has a perfect gothic arch of some twenty feet high, rear their sudden pinnacles above the farther bank. The smoothness of the adjacent ground is broken here and there by an open grove, while an occasional thicket, with one or two rankly overgrown alluvial islands in the river, must constitute a beautiful landscape in summer. This spot was Gen. Atkinson's head quarters during the Black Hawk war, and may be considered about the centre of operations during the recent Indian difficulties. A sharp ride of twelve miles over the open prairie brought us after dark to Buffalo Grove, the scene of some of the most melancholy incidents that attended those commotions. A party of four or five mounted travellers, bound from Galena for the lower country, were obliged to pass the Grove on their route just after the difficulties with the Indians commenced. They had reached the edge of the Grove, when one of the number conceiving that it might harbor an ambush, suggested the expediency of deviating from the usual path, and taking a somewhat circuitous course. He was opposed, however, by his companions; and one of their number taunting him with an unnecessary regard to prudence, spurred his horse and advanced first into the fatal wood. His horse could have made but a few bounds—I have seen his grave just within the edge of the grove—when an Indian bullet brought him to the ground, and his companions wheeling on their track, for the present escaped further mischief. On arriving at Dixon's Ferry, it was proposed the next day to return and bury the poor fellow, who had thus

fallen a victim to his own rashness. Eight persons, among whom was Mr. Savary, the Indian agent for the hostile tribes, volunteered upon the kind office, which was performed without molestation, and the agent, with the greater part of those present, then kept on his way to the upper country; the rest, among whom was my informant, returning to their home on Rock river. A confused account is given of what followed, as four of Mr. Savary's party, including himself, were slain in another ambush, and those who escaped by the speed of their horses, had but little opportunity, after the first surprise, to observe how their companions met their fate. It is agreed, however, that the unfortunate agent, turning in his saddle after the first fire, was shot in the act of appealing to the Indians as their friend and "father"—the reply being a disclaimer of his official character, and the words "we have no longer any white father," accompanying the discharge of the piece whose bullet pierced his brain. The head of the ill-fated gentleman carried off by the Indians, is said to have been afterwards recognized and recovered from the savage band. The Indians fired the house of the settler (an old New Yorker) at Buffalo Grove, and the charred timbers and lonely door-ways contrasted strangely, as I viewed them in passing, by the mering sun, with the neat new log dwelling a few paces off, in which I had most comfortably spent the night before. But these traces of savage war soon, by their frequency, became familiar. The aspect of the country changes considerably soon after passing Rock River. The prairie is frequently broken by sudden ravines. The number of groves increases. The streams run more rapidly over their pebbly beds, and huge masses of crumbling rock rise like the ruined walls of old castles along the mimic vales through which they take their way. In those secluded dells a number of settlers had ventured to fix themselves along the Galena route; and though many have now returned to their precarious homes, the humble dwellings and various little improvements of others remain as they left them when fleeing with their families before the dreaded savage. With the appearance of one of these cottages I was struck particularly. The roots of a large tree, whose branches brushed a wall of rock opposite to it, had caused a sparkling brook to describe the form of a horse, shoes in winding through a small alluvial bottom, while a row of wild plum-trees across the little peninsula thus formed, divided it from the rest of the valley, and just left room enough for the cabin of the settler with a few acres for a garden around his door. A few acres more along the margin of the brook supplies another enclosure; and the fences and fixtures exhibited a degree of care and arrangement by no means common in this region. But the exiled owner had never returned to his tasteful though humble home. The open door swung loose upon a single hinge. The snow lay far within the threshold, and a solitary raven perched upon the roof, seemed to consider the abode of desolation so much his own that, heedless of a flock of his brothers which rose from some canyon near, as we approached the place, he only moved sideways along the rafter and gave a solitary croak as we drove by.

Approaching Galena, the country becomes still more broken and rocky, until at last a few short hills, here called "knobs," indicated our approach to Fever River; while the river itself at once became visible when we had wound round the last of these, and got among the broken ravines that seam the declivity, sloping down for nearly a mile to its margin. Short sudden hills, the bluffs of the prairie beyond, partly wooded and partly faced with rock, formed the opposite shore, while the town of Galena lay scattered along their broken outline, as if some giant had chucked a handful of houses against the hill side, and the slimy mud (for which the streets of Galena are celebrated) had caused them to stick there. We crossed on the ice, and I am now once more in a frame house.

POEMS, BY CYNTHIA TAGGART, Providence, R. I.—CRANSTON & HAMMOND.—This is a remarkable volume. Many of our readers will, doubtless, remember an *Ode to the Peppy*, published some months ago in this paper, in introducing which, the fact was stated, that the writer was, and had for years, been the helpless tenant of a sick bed. We here have a collection of poems from the same pen, and written under the same circumstances of suffering and discouragement. Yet, the mind—the immortal mind—triumphs over the sorrows of poverty, the bitterness

of affliction, and the tortures of disease, and soars on Empyrean wings into the high regions of poetry. There is genius, grace, pathos, and, above and over all, a resigned and quiet spirit, and unwavering Christian hope, pervading this little and well printed volume, that must commend it alike to the acceptance of virtue, and the approbation of taste. A more melancholy story than that connected with the history of this young person, can hardly be imagined. The father, a revolutionary officer, feeble, broken in constitution, and poor, wore out the latter end of his days in anxious efforts to obtain the pension due to the services of his youth. Just as success crowned these efforts, he died. His wife—(we take all these particulars from an affecting letter of the Reverend B. C. Cutler, prefixed to the poems)—was a confirmed invalid, and could only, with difficulty, discharge the ordinary domestic duties. There were three daughters, of whom one was bereft of reason, and the other two were martyrs to disease, the one having been two years, the other seven years confined to her bed.

We will give Mr. Cutler's own words, in telling the rest:—

The father, the mother, and one of the daughters appeared cheerful and resigned; but the other daughter seemed greatly depressed. She had been now seven years on a bed of exquisite pain. Her hair had turned gray by the unmitigated anguish of her head. Sleep had long deserted her, and she seemed to have been in the act of martyrdom for years.—Confined for so long a time to her bed, incapable of occupation, or amusement, at times, even of devotion, she struggled hard to say "Thy will be done." She however appeared to confide in God, but was destitute of spiritual consolation.

In this state, and in this place, she composed, from time to time, the Poems which are about to be published. They are like the lamentations of Jeremiah, or, more truly, like the complainings of Job; and may serve to make both the prosperous and the afflicted more grateful, and submissive to the allotments of Divine Providence.

The Poems were composed and committed to memory, chiefly in the night; and were committed to writing by the father and others, at their leisure.

A little garden before her window, the sun which rose and set, the winds of heaven which shook her cottage, and the ocean, whose "billowy anthem" was ever chanting at the foot of the hill, afforded the only variety to her thoughts. From these and from her bodily sufferings she draws subjects and illustrations for her Muse. She remains to this day sunk on a bed of anguish, calm and patient.

It is hoped by the publication of these poems to add something to the narrow means of this afflicted, but unrepining household, and to pay at the same time a merited tribute to genius.

We annex some lines, which will bear out, we think, all we have said:—

THE VOICE OF THE WIND.—1839.

But list! O list! the mighty Harp,
Devoid of frame or strings,
Touched by a hand omnipotent,
With tones celestial rings;
With awful notes now swelling high,
Bearing mysterious power,
Then sinking soft with gentle voice,
Breathing of mercy's dower.
O list again! the soothing sound
Of Sympathy is near;
Enchanting tones aerial
Burst on the captive ear.
Ah! yes, and now the pitying tears
Fast falling bathe the ground;
Weeping the woe, the grief, the fears
That wretchedness surround.
Then cease my soul, no more repine;
The healing mercy flows;
Blest sympathy, with voice benign,
Her cordial gifts bestows.

OBSERVATIONS ON THE EDUCATION OF THE DEAF AND DUMB: Re-printed from the North American Review. Boston, 1834. pp. 80.

A correspondent, who takes great interest in the subject treated in this pamphlet, asks a place, which we willingly give, for the following notice of it:

"It is a re-print of the article on Deaf and Dumb Instruction, in the April number of the North American Review, with the addition of about thirty pages,

which the limit assigned to matter in that periodical made it necessary for the author to suppress."

It is understood to be from the pen of Professor Barnard, of the New York Institution for the Deaf and Dumb. Those who read it will have a better recommendation in the article itself, than any which we should be able to give them: and if we abstain from expressing our high sense of its merit, to those who will not peruse it, it is only because we have not the space to prove our assertions. We may remark, however, that it is altogether superior to any thing on the subject which has hitherto appeared in the United States.

The thirty pages which now make their first appearance in this pamphlet, are of a character more particularly to interest the general reader. From them we make a few quotations. The first is respecting personal signs:

"Signs denoting persons are usually derived from trifling peculiarities of physical conformation, of manner or of dress, which arrest the attention of the deaf and dumb at first sight. These peculiarities may be barely transient, but the sign is retained after the circumstance in which it originated has passed away. The deaf and dumb are particularly expert in detecting distinctive circumstances which would escape ordinary observation. When President Monroe visited the Asylum at Hartford, he wore a cocked hat, of the old school; and it was by reference to this article of dress, that he was ever after designated among the pupils. The same sign has since become generalised; and it is now applied indiscriminately to all Presidents, whether their functions be political or otherwise. Dr. Spurzheim, on the occasion of a similar visit, in taking a survey of the pupils assembled for prayers, placed his hand for a moment over his eyes to screen them from the light. The imitation of this action afterwards constituted his distinctive sign."

The following facts with respect to the deaf, dumb, and blind girl, at the American Asylum, who attracted so much attention a few years since, may, perhaps, interest some of our readers:

"Julia Brace, at present in the Asylum at Hartford, was deprived at once of hearing and of sight, at the early age of four years. She bore her calamity, at first, with little resignation; but her disposition, at length, became remarkably serene. The accomplished pen of our American Hemans, Mrs. Sigourney, an early benefactress of this unfortunate female, has already given her story to the public; to the correctness of which we take pleasure in here according our testimony. We do this the rather, that since the publication of that article, many persons, induced by its statements to visit Julia, have found in her a less interesting object than they had anticipated. This poor girl is not now, in fact, what she was. It is painful to observe, that, as her monotonous years roll away, the same docility, the same uniform placidity of temper, the same willingness to meet the advances of strangers, and the same readiness to exhibit proofs of her manual dexterity, and of her wonderful sagacity in distinguishing individuals, and the articles belonging to them are not always apparent. But in Julia Brace, notwithstanding her absolute exclusion from society, the existence of the moral sense, is strikingly manifested. With her right of property is sacred.—An article committed to her for examination or for keeping, she will deliver to no individual but the owner, to whom she will deliver it without hesitation, and with an appearance of satisfaction. Should the owner neglect to receive it, she will even force it upon him, and having satisfied herself that it is once in his hand, will immediately relinquish her hold. She selects her own articles of clothing from among those of all the female pupils, and never, in any instance, has been known to appropriate the property of another."

Although we are compelled with these two extracts to finish our notice of this article, we must not omit to mention that its general character is that of a labored disquisition, and that the anecdotes which we have quoted, and others similar to them, are introduced only by way of illustration. The author appears to understand his subject, and is intent on penetrating fundamental principles, instead of merely skimming the surface. The whole paper seems calculated to do much towards rescuing the subject of deaf and dumb instruction from the comparatively

low estimate formed of it by the public, and towards giving it a consideration equal to that with which the subject is viewed in France.

HARPER'S FAMILY LIBRARY—Vols. LXVI., LXVII., LXVIII., LXIX.—New-York, HARPER & BROTHERS.—It is a source of real gratification to us, as we are sure it must be to the friends of knowledge and good letters throughout our country, that amidst the interruptions and disasters which have more or less paralyzed all other trades, these enterprising publishers are enabled to continue their career of useful activity.

Of the four volumes before us, the first two are a continuation, or second series, by ALLAN CUNNINGHAM, of the Lives of Eminent Painters; and those who read the first series with pleasure—as from the taste with which the general subject is handled, and the agreeable style of the writer must have been the universal result—will find the continuation not less attractive. From the life of Copley, our American artist, we make the following extract, both for the sake of the description given of the picture—one that the present relation of our Supreme Executive with the Senate of the United States renders, perhaps, somewhat admonitory—and for the very calculating and business like letter of Earl Ferrers:

The mind of Copley teemed with large pictures: he had hardly failed in his Irish subject before he resolved to try an English one, viz. the Arrest of the Five Members of the Commons by Charles the First. Malone, an indefatigable friend, supplied the historical information, and gave a list of the chief men whose faces ought to be introduced. It was the good fortune of the eminent men of those days, both Cavaliers and Roundheads, that their portraits had chiefly been taken by the inimitable Vandyke: all that had to be done, therefore, was to collect these heads, and paint his picture from them. They were, it is true, scattered east, west, north, and south; but no sooner was Copley's undertaking publicly announced, than pictures came from all quarters; and it is a proof of his name and fame that such treasures were placed in his hands with the most unlimited confidence. The labor which this picture required must have been immense; besides the grouping, the proper distribution of parts, and the passion and varied feelings of the scene, he had some fifty-eight likenesses to make of a size corresponding with his design. The point of time chosen is when the King having demanded if Hampden, Pym, Hollis, Hazlrig, and Strode were present, Lenthall, the Speaker, replies,—“I have, Sir, neither eyes to see, nor tongue to speak, in this place, but as the House is pleased to direct me.” The scene is one of deep interest, and the artist has handled it with considerable skill and knowledge. The head I like best is the dark and enthusiastic Sir Harry Vane: the Cromwell is comparatively a failure. Many have left their seats dismayed; while fear, and anger, and indignation have thrown the whole into natural groupings: the picture was much talked of when it appeared, and deserves to be remembered still.

There has always been a difficulty in disposing of historical pictures in this country; and no one was doomed to experience it more than Copley: no customer made his appearance for Charles and the impeached Members. I know not whether the following remarkable letter, from a wealthy peer, arose from his own inquiries, or from an offer made by the artist; the letter, however, is genuine, and proves that they err, who imagine that the spirit of bargaining is confined to mercantile men:—

“Lord Ferrers's compliments to Mr. Copley; he cannot form any judgment of the picture; but, as money is scarce, and any one may make eight per cent. of their money in the funds, and particularly in navy bills, and there is so much gaming, he hopes he'll excuse his valuing his picture in conformity to the times, and not think he depreciates in the least from Mr. Copley's just merit; but if he reckons fifty-seven figures, there are not above one-third that are capital, but are only heads or a little more; and therefore he thinks, according to the present times, if he gets nine hundred pounds for the picture with the frame, after the three other figures are put in, and it is completely finished, and he has the power of taking a copy, it is pretty near the value: that is what very few people can afford to give for a picture. However, if Mr. Copley would undertake to do a family piece for him with about six figures, about the size of the picture he has of Mr. Wright's, with frame and all, he would

agree to give him a thousand guineas for the two pictures. But he imagines the emperor or some of the royal family may give him more, perhaps a great deal more, which he wishes they may, and thinks he well deserves; but if he can't make a better bargain, Lord Ferrers will stand to what he says, and give him six months to consider of it, and will not take it amiss if he sells it for ever so little more than he has mentioned, as he has stretched to the utmost of his purse, though he does not think he has come near up to Mr. Copley's merit.

“Upper Seymour Street, 5th June, 1791.”

The two other volumes present us with a *History of Arabia*, by ANDREW CRICHTON.

Considering how much of real and substantial knowledge, and how much of delightful romance we owe to Arabian learning and Arabian fancy, and how great the influence which was exercised even in western Europe by the warlike race that for a while held dominion from the Pillars of Hercules to the Wall of China, we are less conversant with the history of their country, than with the history of any other. Mr. Crichton in these two volumes, has condensed a vast mass of information, rectifying by consulting the records of modern travellers and investigators—especially among the latter the exact and indefatigable Niebuhr—many, erroneous crudities and prejudices.

We annex as a fair specimen of the work, a notice of the taste for, and rapid growth of, literature, science and the arts, under the Abbassides:

It was at a period when ignorance and barbarism overspread every part of the Western World, that literature and philosophy found an asylum in the schools of the Saracens. Unlike the Goths and Huns, they became the instructors and enlighteners of the countries they had conquered. Their stern fanaticism yielded to the mild influence of letters; and, by a singular anomaly in the history of nations, Europe became indebted to the implacable enemies of her religion and her liberties for her most valuable lessons in science and the arts. In the preceding chapters of this work we have beheld the disciples of Mohammed in the character of warriors and conquerors. Their success in arms had been enough to satiate even the most unmeasured ambition. But, great and splendid as were the events we have just detailed, we shall turn with pleasure from fields of blood, from scenes of misery and vice, to contemplate the more gentle and useful progress of the Arabs in the cultivation of learning. The first Mussulmans knew, or at least esteemed, no other book than the Koran. But this aversion to intellectual pursuits gradually relaxed, in proportion as their faith and their empire extended. The possession of those happy countries, so long the seats of ancient taste and splendor, naturally introduced among them a spirit of refinement; and here their career was as rapid and surprising as it had been in the field. The literature of Greece, such as it was in the days of Pericles, required the slow growth of nearly eight centuries of progressive cultivation. The same period elapsed between the foundation of Rome and the age of Augustus. In France, the reign of Louis XIV., the brilliant era of wit and genius, was 1200 years subsequent to that of Clovis. But among the Saracens, such was their enthusiasm for learning, that little more than a single century elapsed from the period of their deepest barbarism to the universal diffusion of science over the vast extent of their dominions. It was in the year 641 that Omar committed the Alexandrian library to the flames, and in 750 the house of Abbas, the munificent patrons of letters, mounted the throne.

Under the first of the Omniadian caliphs, the genius of Greece had begun to obtain an influence over the Arabs. But it was not till the great and final division of the empire—till Bagdad arose, a fair and splendid city—that the golden age of Arabian literature commenced in the East, and the Muses were courted from their hallowed retreats beyond the Bosphorus, to expiate the guilt of conquest, and illustrate the fame of the Abbassides. Al-mansur, successful in his domestic wars, turned his thoughts to the acquisition of science. Accident brought him acquainted with a Greek physician, named George, who was invited to court to prescribe for the removal of a temporary indigestion. To him the Saracens were indebted for the introduction of medicine. The famous Haroun al Raschid has acquired a splendid name as the encourager

of letters. He was fond of poetry and music, and himself considerably skilled in these divine arts. Volumes have been written on the learning of the Moslem empire during this caliph's reign. Whenever he undertook a journey, or a pilgrimage, he carried with him a retinue of a hundred learned men. The Arabs were deeply indebted to him for their rapid progress in education, for he issued a law that a school should be attached to every mosque erected within his dominions. With a toleration superior to the fanaticism of his creed, he did not despise the knowledge which the believers of another faith possessed. The head of his schools, and the chief director of academical studies in his empire, was a Nestorian Christian of Damascus, of the name of Jehn ibn Messue. His generous example was imitated by his successors; and in a short time the sciences that were cultivated in the capital were diffused to the distant extremities of the caliphate.

But the Augustus of Arabian literature was Al-mamoun, whose attention from his youth had been chiefly engrossed with books and study. Even in his father's lifetime, and during his journey to Khorasan, of which he was appointed governor, he had selected for his companions the most eminent scholars among the Greeks, Persians, and Chaldeans. His accession to the throne did not abate his ardor for knowledge. Bagdad became the resort of poets, philosophers and mathematicians, from every country and of every creed. His ambassadors and agents in Armenia, Syria and Egypt were ordered to collect the most important books that could be discovered. The literary relics of the conquered provinces, which his governors amassed with infinite care, were brought to the foot of the throne as the most precious tribute he could demand. Hundreds of camels might be seen entering Bagdad loaded with volumes of Greek, Hebrew and Persian literature: and such of them as were thought to be adapted to the purposes of instruction, were at the royal command translated by the most skilful interpreters into the Arabic language, that all classes might read and understand them.—Masters, instructors, translators, and commentators formed the court of Bagdad, which appeared rather to be a learned academy than the capital of a luxurious and warlike government. Aware of the vast treasures that were deposited in the libraries of Constantinople, Al-mamoun, in concluding a treaty of peace with the Grecian Emperor, Michael III., stipulated, as one of the conditions, that a collection of rare and valuable authors should be delivered up to him.—These were immediately subjected to the process of translation; but it must be recorded with regret, that, through an ill-judged partiality for his native tongue, he gave orders that after the Arabic versions were finished, the original manuscripts should be burned.

The Caliph Vathek not only admired and countenanced literature and the sciences, but was himself a proficient in some of them, especially poetry and music. He was particularly addicted to astrology; and having conferred with some of his learned fraternity in his last illness, they assured him, on consulting his horoscope, that his reign was yet to endure fifty years. His death in ten days falsified this prediction, and ruined the credit of Hassan ibn Sohal. Abu Masher, an eminent astrologer, flourished in the reign of Mostein; but his talents received sorry encouragement, for that prince ordered him to be severely whipped, because an event which he had foretold actually came to pass.

Long after the power of the Abbassides had dwindled into a mere pageant of state, they affected to patronize and cultivate learning. Many distinguished men in almost every science illustrated this period of Saracen history; but the capital of the muses in the East had seen innumerable rivals spring up in other parts of the empire. The last prince that shed a ray of departing glory on his race was the Caliph Mostanser, who adorned Bagdad by the celebrated college that bore his name. According to oriental historians, this edifice had no equal in the Moslem world, whether we consider the beauty and elegance of the building, the number of students it contained, or the splendid revenues assigned it by its founder. Each of the four chief sects of the Sonnees had its appointed professor, with a monthly salary and a maintenance from the royal exchequer. Every student had daily a very handsome allowance of provisions of all kinds. There were baths set apart for their use, and a physician employed to attend them at the caliph's expense.

STORIES OF POLAND; by ROBIN CARYER. Boston: CLAPP & BROADERS.—This is a well-timed and instructive little book, intended to interest children in the fate and history of unhappy Poland. The stories

are well told, and there are a great many pictures, moreover.

CELEBRATED SPEECHES OF CHATHAM, BURKE AND ERSKINE; to which is added the argument of Mr. Macintosh in the case of Peltier; selected by a member of the Philadelphia Bar: 1 vol. 8vo; *Philadelphia, Kay & Biddle*.—We are glad to see such models presented in so good a form to the youth of our country. We lack taste as orators: we are too redundant—too verbose; apt to overcharge, and above all, to spin out interminably our harangues. Where there is boundless wealth both of knowledge and fancy, as with Mr. Burke, one may endure,—for even then it is a penance,—a book under the name of a speech; but only think of Mr. Benton, of Missouri, inflicting such a punishment on the nation. The volume is well printed; and is, we are glad to learn, to be followed by another, giving speeches of Fox, Pitt, Sheridan, Canning, and Brougham.

NATIONAL CALENDAR AND ANNALS OF THE UNITED STATES, for 1834, by PETER FORCE: *Washington, FISHEY THOMSON*.—To this book we have been indebted for much valuable information, for which erroneously we have given credit from time to time to the *Blue Book*, so often referred to in Congress, and which we confounded with this. Their contents are very similar; and to any one who would know the interior and whole detail of our Government—the number and duty of officers—amount of compensation—and everything that relates to the actual and active machinery of the system, this a most valuable manual—and we recommend it accordingly.

HELEN, A TALE, by MARIA EDGEWORTH; 2 vols.: *Philadelphia, CAREY LEA & BLANCHARD*.—After a long interval we have here a new work from the admirable pen of Miss Edgeworth. Time does not seem to have abated aught of its former spirit.—Helen will be read with avidity—and by those who meditate the moral, as well as enjoy the incidents of such a tale—with certain benefit. It is an illustration throughout of the value and indispensableness of truth, and of the dangers of any concealment of it. The three characters—of Miss Clarendon, who sometimes made truth repulsive—of Lady Cecilia, who could not understand that it was necessary always to adhere to it—and of Helen, who, wherever her own self or own interests were concerned, always told it—though in the affairs of her friend Cecilia, assenting to—not deceit—but concealment—are admirably wrought out—and combined as they are—with a good general story of high life, and much—perhaps too much elaborately clever dialogue—constitutes altogether a charming work.

THE **HARPERS**, we should add, have also just issued this latest work of Miss Edgeworth—in one volume, constituting Vol. X.—of their handsome, uniform, and well executed stereotype edition of the *Tales and Novels of Miss Edgeworth*.

SUMMARY.

THE FINE ARTS.—In the hope that the sun of May will soon shine upon us, and tempt abroad the lovers of the beautiful in art, we commend to the notice of our readers the exhibition at the Academy of Arts in Barclay street, of *Cole's* picture of the *Angel appearing to the Shepherds*, and *Ball Hughes's* group of *Uncle Toby and Widow Wadman*.

The picture is a very striking one, and the subject, difficult as it is, is treated with great skill. In the midst of a fine landscape, constituting of itself an attractive painting, the shepherds are suddenly startled by the appearance of the heavenly messenger and the shining forth of the bright star indicating the spot to which they were directed. Prostrate on the earth, they listen to the glad tidings of a Saviour born unto them and all mankind, and their reverential awe is well contrasted by the unconscious and undisturbed serenity of the dumb flocks around. The star, by

a most happy license, is represented as darting forth its refulgent light in rays that form a cross, and the effect is greatly heightened by its reflection in a transparent sheet of water beneath. Among the minor accessories is that of a snow white lamb in the foreground typifying the spotless birth announced to the Shepherds. The coloring, design, and general effect of the picture strike us as admirable; and the only objection we have to make is one common to all others where spiritual and incorporeal beings are introduced and presented in the substantial form and lineaments of mortals. It shocks the natural sense to see such figures self-supported in air, and robed in drapery of earthly texture.

The group by *Ball Hughes*, which is in an adjoining apartment, presents Uncle Toby in the sentry box, invaded by the Widow Wadman, complaining of something in her eye, which she is showing to the simple minded and unsuspecting soldier, who looks into it with all his credulous soul—without, indeed, finding there ought that troubled her, but not without the risk of being thereby considerably troubled himself. The whole appearance of the Widow might, in truth, trouble a stoic. We could hardly imagine that so much expression could be thrown into so cold a material. The folds in the robe are almost incredibly natural; and the little foot that is carelessly dropped into view from beneath it, could not be improved. The figure of Uncle Toby strikes us as comparatively too large, and the limbs particularly as too robust for the body.

We wish our Broadway fashionables, of both sexes, would make the Academy a lounge. The position is central; the rooms are well ordered; and the attraction of these two Exhibitions sufficient to invite repeated visits—besides the chance of meeting there "all one's acquaintances."

LAKE ONTARIO.—The Steamboat United States, Capt. Van De Water, touched at the mouth of the Genesee River, on Wednesday last, with 1000 passengers!

GENESEE RIVER.—The Steamboat Genesee, Capt. Weed, has commenced her trips between Rochester and Genesee. She went from Genesee to Rochester in six hours.

The Sag Harbor Coroner states, that a boat which left that place on Saturday for Three Mile Harbor, having on board John Perry, Collins Miller, Jonathan Miller—Stillman, all of Easthampton, has since been found at sea a wreck, and it is supposed those on board were drowned.

The Cherokee Phoenix of 29th March, is in mourning for the death of the honorable WILLIAM WIRT, whom it denominates "not only the legal and able counsellor of the Cherokees, but likewise their most sincere and faithful friend."

APPOINTMENTS.—The Globe contains a long list of officers confirmed by the Senate. Most of them are reappointments connected with the Custom House, and the land offices. Among them we remark Aaron Ogden, as Assistant Collector at Jersey City, and in this State Thomas Loomis, Collector at Sackett's Harbor, Jacob Gould at Rochester, Seymour Sewell at Lewistown, Baron S. Doty at Ogdensburg, Jere Carrier at Cape Vincent, John P. Osborne at Sag Harbor, David B. McNeil at Pittsburg, George H. McWhorter at Oswego, and Sam Swartwout at New York.

The United States Frigate Brandywine sailed yesterday for Norfolk.

OFFICERS.—David Deacon, Captain.—Lieutenants, William Inman, Henry Bruce, J. G. Van Brunt, Edward S. Johnson, John H. Smith, H. H. Hobbs.—A. A. Adey, Surgeon.—Samuel F. Hazard Sailing Master.—J. R. Lambert, Chaplain.—A. G. Gambrill, Assistant Surgeon.—Passed Midshipmen, John Weems, William C. Spencer, E. M. Yard, Charles Green, Luther Stoddard, William B. Ludlow, J. S. Patterson, C. H. Piper, C. Valentine, L. W. Wilkins, Daniel McKay, C. R. P. Rodgers, Francis Winslow, J. S. Biddle, M. D. E. Watson, R. R. Nicholls, Jas. W. Reed, S. Pierce, Francois Loury, Joseph Norville.—Boys acting as Midshipmen, R. B. Biel, John Dennis, Howard Tillotson.—John Peira, Jr. Schoolmaster.—Charles Boardman Carpenter.—J. R. Childs, Sailmaker.—Daniel James Gunner.—D. McComb, Purser's Steward.—James C. Low, Master's Mate.—Thomas C. Ryall, Captain's Clerk. Ship Brandywine, Jos. H. TERRY, Purser.

The Opera at Philadelphia seems more attractive to the ladies than to the gentlemen: the latter of whom, according to the Philadelphia papers, not even music and beauty combined can draw to the theatre.

NEW BANKS.—Seven bills have passed both houses of the Legislature for the incorporation of Banks, and one increasing the capital stock of an existing bank, as follows:

	CAPITAL.
Commercial Bank, Buffalo	\$400,000
Sackett's Harbor Bank, Sackett's Harbor	200,000
Commercial Bank, New York	500,000
Orleans County Bank, Albion	200,000
Albany City Bank, Albany	500,000
Farmers' & Manufacturers' Bank, Po'keepsie	300,000
Highland Bank, Newburgh	200,000
Phoenix Bank, New York [increased]	1,000,000

—[Alb. Argus.] \$3,300,000

General E. Hawkins, of Union District, S. C., died very suddenly on the 16th inst.

[From the Journal of Commerce.]

PHENIX BUILDINGS BURNED.—About 9 o'clock last evening, an alarm of fire was sounded, which was found to proceed from the large five story brick building S. E. corner of Wall and Water streets, known as the Phoenix Buildings. It is about 60 feet on Wall street, by say 50 on Water street. When we reached the spot, the 5th story was completely on fire, and the great height of the building rendered it impossible to reach it, except by the hydrant. The firemen, however, by going inside of the building, and upon the neighboring roofs, succeeded in saving the three lower stories, except that the third was somewhat injured. The 4th and 5th, with the roof, were totally destroyed except the walls. Great credit is due to the firemen for arresting the flames where they did.

The 5th story was occupied by Messrs. Bowne & Co. as a book bindery. Here the fire originated.

In the fourth story was the printing office of the Mercantile Advertiser, the materials of which, including a Napier press, were almost wholly destroyed. We are happy to state, however, that the proprietors (Butler & Co.) were insured, and that they have lost none of their books. A part of this story was occupied by Oakley & Co. for the storage of wool.

The third story was also occupied by Oakley & Co., who, we understand, were insured.

The 2nd story, which was not injured except by water, was occupied by George Barrell, Produce Broker; W. Cahoon & Co, cotton brokers; and two offices were unoccupied.

The first story was occupied by Bowne & Co, (the same who owned the bindery) as a stationer's shop, Wm. N. Norris, copper smith; and J. Mathews, hide dealer. Bowne & Co's goods were principally removed and thus escaped being drenched with water. They were insured.

This building was owned by Mr. Weyman, senior.

The receipts of the Cooper Benefit at New Orleans amounted to about two thousand five hundred dollars

Awful Calamity.—We copy from the Kittanning (Armstrong county) Gazette and Columbian, the following account of a most distressing occurrence:

On the night of Friday, the 18th instant, the house and barn of Captain John C. Kissinger, of Toby township, in this county, were consumed by fire, and what is most shocking to relate, nine of his children perished in the flames! The parents were absent on a visit to Mrs. Kissinger's father's, a distance of about eight miles. Out of eleven children, two only are left—one an infant which the parents had with them, and the other a daughter eight years of age, who was away from home. The way the fire originated is not known, and it was not discovered till about 9 o'clock the following morning. One horse and a large quantity of grain were consumed; in short, nothing was left in or about the house or barn unconsumed.

A gentleman who had been present at the scene of the calamity, subsequently called upon us, from whom we learned a few additional particulars. The sufferers were from nineteen years of age downwards. So far as could be observed, the bones were in the same relative position in which they slept, which leads to the belief that they were smothered in their beds by the smoke before the flames reached them. One only had gone to a different part of the house. Awful as was the agent of their death, it was probably attended with but little suffering. The unhappy parents were at first (and very prudently too) only informed of the destruction of their property. The father returned on Saturday, but the mother remained at her father's until the next morning, still ignorant of the extent of her loss. When she arrived, she surveyed for a moment the smoking ruins, and then asked for her children. Let the reader imagine, if he can, the effect of the shocking disclosure.

It is a remarkable circumstance, and one calculated to heighten, if possible, the distress of these parents, their oldest child was burnt to death some years since.

A horse and a yoke of oxen were burnt. A dog that lay in the barn, was burnt, and his bones were found in the place he was accustomed to lie. Two large hogs were consumed in the pen, although the door was open.

On Sunday, the bones of the children were collected, deposited in a coffin, and buried, in presence of a large concourse of sympathizing friends and neighbors. An impressive discourse was delivered at the grave, by the Rev. Mr. McGarragh.

The weather for the last two or three days has been as cold and boisterous as we usually experience in the early part of March. Ice was formed on Friday and Saturday nights, and we had snow squalls on these days and yesterday. It is feared that the early vegetation has sustained injury.

Yesterday morning a severe N. W. gale set in, and continued till evening. Some damage was done to the shipping in the North river. The ship *Empress*, lying at pier No. 4, broke her fasts and ran into the brig *Marcellus*, both of which were considerably damaged. Other vessels received slight injury. The tin roofs and gutters of the new stores, Nos. 56 and 57 Whitehall, were blown off.

A small wooden tenement, corner of Cherry and Oliver streets, was nearly destroyed by fire yesterday afternoon.—[Mercantile.]

UNITED STATES BANK.—The *National Intelligencer* of Saturday says,—

"Mr. Duncan, of Illinois, yesterday laid upon the table of the House of Representatives, in order that it might be printed, an amendment which he intends to move to the bill lately reported by the Committee of Ways and Means, for regulating the deposits of the public money in the State Banks, when that bill shall come up. That amendment proposes that the Charter of the present Bank of the United States shall be continued for ten years from the 4th day of March, 1836, provided that the United States shall surrender the whole of its stock, and the present stockholders shall surrender half of the stock in the Bank held by them respectively; the several States to have the right to subscribe, at par value, in proportion to their respective representation in the House of Representatives of the United States, for the twenty-one millions of dollars of stock so to be surrendered, or the citizens thereof, in the event of any State's declining to subscribe and pay in the amount of the quota on or before the 1st day of January, 1836. The amendment embraces several other new features; such as limiting the dividend on stock to seven per cent. per annum; the surplus, after the accumulation of a contingent fund of three millions, to be paid over into the Treasury of the United States; prohibiting the issue of any notes of a denomination less than ten dollars; requiring a bonus of \$200,000 per annum, to be appropriated to internal improvements, &c. &c. This being the first practical proposition in the House of Representatives contemplating, in any form, the extension of the charter of the present Bank of the United States, we have thought this brief note of it might be acceptable to our readers."

The occurrence of a fire in New-Orleans, on the 10th instant, has led to a disclosure of circumstances of a horri-fying character. The *Courier* of that day has the annexed particulars:

"A fire broke out this morning in the kitchen of Madame Lalaurie, corner of Royal and Bayou streets, which was soon wrapt in flames. It was known to some of the neighbors, that the upper part of this building was used as a prison, and that it was then tenanted by several unfortunate slaves loaded with chains. Information of this fact was communicated to Judge Canonge, who instantly waited on Mr. Lalaurie, and asked permission of that gentleman, in a polite manner, to have the slaves removed to a place of safety; when the latter, with much rudeness replied, that 'there were those who would be better employed if they would attend to their own affairs instead of officiously intermeddling with the concerns of other people.' The flames gaining rapidly on the building, orders were given to break open the doors, which being promptly obeyed, a most appalling sight was presented, in the shape of several wretched negroes emerging from the fire, their bodies covered with scars and loaded with chains! Amongst them was a female slave, upwards of 60 years of age, who could not move. Some young men carried her to the city guard house, where the others, six in number, were also conducted, to be protected from the cruelty of their owner. We saw one of these miserable beings. The sight was so horrible that we could scarce look upon it. The most savage heart could not have witnessed the spectacle unmoved. He had a large hole in his head, his body from head to foot

was covered with scars and filled with worms!!! The sight inspired us with so much horror, that even at the moment of writing this article, we shudder from its effects. Those who have seen the others represent them to be in a similar condition.

We forbear a further description of this revolting spectacle, as it can hardly be agreeable to the feelings of our readers. We hope the Grand Jury will take cognizance of this unparalleled outrage, and bring the perpetrators of it to the punishment they so richly deserve."

The Bee, of the 11th instant, says—"The populace have repaired to the house of this woman, and have demolished and destroyed everything upon which they could lay their hands. At the time of inditing this, the fury of the mob remained still unabated, and threatens the demolition of the entire edifice."

The New Orleans papers of a date subsequent to those which relate the revolting incidents in the above extract, inform us, that a day or two after the fire, and when all the property of the woman fiend whose unheard of cruelties are the subject of this extract, was replaced in her house, a large collection of persons assembled, and gutted it from top to bottom, demolishing every article of furniture, tearing up the floors even, and leaving nothing but the walls standing. Plate, jewelry, glass, piano's, &c., were tossed into the street and trampled under foot. One paper estimates the damage altogether, at \$40,000. Mob law is always bad law—yet in this case, human nature could not but revolt against the atrocities so providentially revealed.

John H. Eaton has been appointed by the President of the United States, with the advice and consent of the Senate, to be Governor of the Territory of Florida, to succeed Governor Duval, whose term of service has expired. The nomination, made to the Senate some days ago, was confirmed yesterday.—[*National Intelligencer* of Friday.]

UP A TREE.—The following letter from the Post Master of Columbia, S. C. accounts for the failure of two mails.

LOSS OF THE MAIL.

Post Office, Columbia, S. C. 14th April, 1834.

One of the Mails going North, got lost in the river between this and Camden, yesterday morning, and the other is now on a tree in the river and unapproachable. It is not known which Mail got lost; the drivers think it is the Great Mail which lodged on the tree: if they judge from its size, it is probable they are mistaken; for our Mail on Sunday was sent off in a very large Portmanteau. One of the negroes attending at the Ferry got drowned.

The Wateree river is very full, and we have had no Northern Mail since Friday night.

Respectfully,

B. F. RAWLS, Ass't P. M.

P. M. Augusta, Geo.

NEW ORLEANS, APRIL 15.—We understand that on Friday night last, a young man by the name of Kelly, in a fit of passion, cut the throat of his wife with a razor. Immediately after, believing her dead, he cut his own with the same instrument. The wife was not dead on Saturday morning last, and hopes were then entertained of her recovery. We have been unable to obtain any further particulars.

Shipwreck.—British bark Robert Russell, from N. Orleans for Liverpool, was lost on Sand Key, first March. Cargo will be saved—part of it had arrived at Nassau, N. P. on the 15th.

The Girard Bank.—The President of the Girard Bank has made an arrangement with the Secretary of the Treasury, by which that institution terminates its connexion with the Treasury. The deposits will be given up by the first of July.—[*Philadelphia Intelligencer*.]

The Arkansas Gazette of the 15th instant, furnishes information of the death of Lieut. Wm. Bradford, of the United States Dragoons, by the accidental discharge of one of his pistols whilst placing them in the holsters, preparatory to mounting his horse.—His remains were carried to and interred at Fort Gibson.

The Norfolk Beacon says—"The schooner *Minerva*, of Thomastown, Gray, while lying between the forts, was struck by lightning, on Saturday morning last, at about 5 o'clock. Both masts were struck at the same time, injuring them so much as to render them unfit for use—the lightning descended to the

deck, a part of which was ripped up—the crew escaped uninjured.

Mr. Isaac Edwards, of Penntownship, in the western section of Chester county, informs us that he disposed of 211 lbs. of Butter from four cows, in the space of eleven weeks, in the early part of last season; besides furnishing the ordinary supplies of a family of from four to seven persons.—[*Westchester Village Record*.]

RECIPE FOR SCARLET FEVER.—A very simple remedy, says a correspondent, for this dreadful disorder, is now using in this city with good effect. It is merely a mixture of Cayenne pepper, salt, and vinegar, used as a gargle.—[*Commercial Advertiser*.]

NEW YORK MARKET, APRIL 26.

LIQUORS.—From a cargo of Heuglins Gin there were sold on the wharf 60 pipes in lots, at 105 cents; from store it is sold at 106 cents. Borden Brand, Crown brand, at 115 cents. St. Croix Rum on the wharf at 93 cents. Whisky in bis, at 24 cents, and in druggs casks at 22 cents.

PROVISIONS.—Beef and pork continued to go off freely, and at full prices. Orleans prime pork, reinspected, at \$9 25. In butter more is doing; dairy we quote at 12 1/2 a 15 cents, which is rather a low price. The stock of cheese is low.

WOOL.—Prices tend downward with but few sales. **CORN EXCHANGE.**—Flour was heavy throughout. Common brands of Western closed at \$5 37, and fancy at \$5 50; some Utica city was sold at \$5 31; Tryon and Albany sold at \$5 on some short account. 1700 bushels good Genesee wheat in store was sold at 106 3/4 cents a bushel; a cargo arrived from Virginia, but was not sold. Rye sold freely at 60 cents for northern. Northern corn at 60 a 62 cents.

BALTIMORE MARKET—April 25.

COFFEE.—There has been a fair demand on the part of the trade for Rio Coffee.

Flour—Howard street Flour.—The demand for this description has been quite limited, and transactions from stores are consequently but few.

City Mills Flour.—We have no sales to report. **Sauquoit Flour.**—The quality of this description is generally much approved this season, and the article has been in fair demand for export.

GRAIN—Wheat.—The sales of Wheat since our last weekly report, have been at an advance of several cents per bushel. Most of the City Mills are yet idle for the want of wheat.

Corn.—There was a full supply at the opening of the market on Monday, and prices receded a little. Sales of yellow were made at 55 cents, and of white at 55 1/2 cents.

Rye.—We have to note a decline in prices.

Oats.—Sales as in quality at 30 a 33 cents per bushel. **Scots and Shipstuffs.**—have advanced. We quote the former at 18 cts, and the latter at 32 a 33 cts per bushel.

Price of Produce in Alexandria, D. C. April 25.

Flour, per barrel	\$4 37 1/2	a	\$0 00
WHEAT, per bushel	0 80	a	0 00
Corn, white, wanted	0 58	a	0 00
Do yellow, do	0 54	a	0 00
RYE, do	0 60	a	0 00
OATS, from wagons, bushel	0 40	a	0 00
Do from vessels, do	0 35	a	0 00
CORN MEAL, white, do	0 70	a	0 00
Do do yellow, do	0 65	a	0 00
CLOVERSEED, do	4 25	a	4 50
FLAXSEED, do	1 00	a	0 00
WHISKY, per gallon	0 92	a	0 23
HACON, per cwt.	6 50	a	0 00
BUTTER, fresh, per lb.	0 80	a	0 25
Do skink, do	0 12	a	0 15
LARD, do	0 07	a	0 08
PLASTER PARIS, retail, ton	5 00	a	0 00

Flour.—Yesterday, the wagon price of Flour was \$4 37 1/2. We were not advised of any sales from stores; several lots of stored Flour were priced at \$4 37 1/2-12. The market is quiet.

Review of the New Orleans Market, abridged from Leoy's Price Current of April 12.

Credit and confidence are much impaired; those who have heretofore been in the habit of making liberal advances, or giving extensive credits, have, from necessity, greatly curtailed them; their sales, and consequently their profits, falling far short of what, under other circumstances, they might reasonably have anticipated. Reflecting men hesitate about entering into contracts, when even the possibility of a doubt exists as to their having the ability to meet their engagements. Of the causes which produced this state of affairs, we have not pace, neither is it our province, to speak; we merely notice the effects.

COTTON.—Arrived since the 4th instant: of Louisiana and Mississippi 8170 bales; Tennessee and North Alabama, 9526; Florida, 256—altogether, 17052 bales. The sales of the week amount to about 17,000 bales, of which we have been able to learn the particulars of the following, viz:—776 at 11 1/2, 975 at 10 1/2, 103 at 10 1/2, 243 at 11, 500 at 11 1/2, 108 at 11 1/2, 300 at 11 1/2, 50 at 9 1/2, 94 at 11 1/2, 140 at 11, 190 at 11 1/2, 800 at 11 1/2, 200 at 12 1/2, 600 at 10 1/2, 13, 70 at 10 1/2, 420 at 11 1/2, 233 at 10 1/2, 48 at 11 1/2, 70 at 11 1/2, 89 at 11 1/2—all Louisiana and Mississippi, 512 at 10 1/2, 2000 at 10, 103 at 10 1/2, 600 at 10, 1000 at 10 1/2, 100 at 11 1/2, 53 at 10 1/2, 400 at 10 1/2, 2150 at 11 1/2—of Tennessee and North Alabama, 50 bales Arkansas, at 10 1/2, and 300 Lake at 10 1/2 cents per lb. There has been a good feeling manifested in the market throughout the week, and nearly all descriptions have met with a brisk demand, at an advance of fully 1 cent, and, in some instances, a shade higher, on the Liverpool classification. Mississippi Cotton, it is said, is becoming extremely scarce, and very little for sale now in market.

LIVERPOOL CLASSIFICATION.

Ordinary	9 1/2	a	9 1/2
Middling	10	a	10 1/2
Fair	11 1/2	a	12
Good fair	12 1/2	a	13
Good and fine	13 1/2	a	14

SUGAR.—We notice no change in the price of Sugar since our last report. Molasses continues to arrive, but in small quantities, and must soon become scarce; the season, as we before remarked, being nearly at a close, a portion of that now coming in is of inferior quality.

TOBACCO.—There still continues to be a brisk demand for Tobacco.

FLOUR.—Notwithstanding the depressed state of the market for this article, it still continues to arrive freely.

CORN.—The supply of Corn in market in the Ear is abundant, and of 8½-lb in sacks fully equal to the demand. Arrived this week, 4015 bbls, 9834 sacks.

LEAD.—The price of Lead remains without change; at present there is nothing doing.

MAKERS.—Our quotations remain the same as last week.

FURS AND FURTRIMS.—There has been a number of heavy arrivals lately, which knocked down the market, and last week they were extremely dull.

FRUITERS.—The only alterations we have to notice are in the rates to Havre, three vessels having taken up at 138 for Cotton, per lb; and for Tobacco, per bbl to Cows, 60 shillings is now taken. We have to remark they are dull.

NOW READY.

AN INTERESTING AND USEFUL MAP.

Upon which is delineated nearly all the Railroads now chartered in the U. States. It is designed to show the present contemplated connexion of the different lines, as well as where others may hereafter be constructed to connect with them. It may be had either in sheets, price \$1 25, or put up in morocco for pocket maps, price \$1 50, or on rollers at \$2 25, in any quantity, by applying to the subscriber.
D. K. MINOR, 35 Wall street.
New-York, April 2, 1835.

RAILROAD TURNOUTS, REVOLVING PLATFORMS AND SIDELINGS.

The subscriber having been for some years engaged in constructing turnouts, and inserting the necessary switches and fixtures appertaining to the same, on the Baltimore and Ohio Railroad, and as those works on that road will be shortly completed, he is desirous of being employed by any Railroad Company requiring work of the above description.

He will either contract at a fixed price to execute the work, he providing all the necessary materials and fixtures, or otherwise, or he will engage himself at a stated salary.

In relation to his abilities and general character he begs to refer to any Company, disposed to engage him, to the Baltimore and Ohio Railroad Company.

Letters can be addressed to him at the Office of Construction Baltimore and Ohio Railroad, Baltimore.

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REUBEN ALER.

LOCOMOTIVE ENGINES.

THE AMERICAN STEAM CARRIAGE COMPANY, OF PHILADELPHIA, respectfully inform the public, and especially Railroad and Transportation Companies, that they have become sole proprietors of certain improvements in the construction of Locomotive Engines, and other railway carriages, secured to Col. Stephen H. Long, of the United States Engineers, by letters patent from the United States, and that they are prepared to execute any orders for the construction of Locomotive Engines, Tenders, &c. with which they may be favored, and pledge themselves to a punctual compliance with any engagements they may make in reference to this line of business.

They have already in their possession the requisite apparatus for the construction of three classes of engines, viz. engines weighing four, five, and six tons.

The engines made by them will be warranted to travel at the following rates of speed, viz. a six ton engine at a speed of 15 miles per hour; a five ton engine at a speed of 18 miles per hour; a four ton engine at a speed of 23 1/2 miles per hour. Their performance in other respects will be warranted to equal that of the best English engines of the same class, with respect not only to their efficiency in the conveyance of burdens, but to their durability, and the cheapness and facility of their repairs.

The engines will be adapted to the use of anthracite coal, pine wood, coke, or any other fuel hitherto used in locomotive engines.

The terms shall be quite as favorable, and even more moderate, than those on which engines of the same class can be procured from abroad.

All orders for engines, &c. and other communications in reference to the subject, will be addressed to the subscriber, in the city of Philadelphia, and shall receive prompt attention.

By order of the Company.

WILLIAM NORRIS, Secretary.

December 24, 1833.
For further information on this subject see No. 40, page 774 of this Journal.

ALBANY SEED-STORE AND HORTICULTURAL REPOSITORY.

The subscriber having resumed the charge of the above establishment, is now enabled to furnish traders and others with FRESH GARDEN SEEDS, upon very favorable terms, and of the growth of 1833, warranted of the best quality.

The greatest care and attention has been bestowed upon the growing and saving of Seeds, and none will be sold at this establishment excepting those raised expressly for it, and by expert seedsmen; and those kinds imported which cannot be raised to perfection in this country; these are from the best houses in Europe, and may be relied upon as genuine.

It is earnestly requested whenever there are any failures hereafter, they should be represented to the subscriber; not that it is possible to obviate unfavorable seasons and circumstances, but that satisfaction may be rendered and perfection approximated.

Also—French Lucern, White Dutch Clover, White Mulberry Seed, genuine Mangel Wurzel, Yellow Locust, Ruta Baga, and Field Turnip Seeds, well worth the attention of Farmers.

W. THORNBURN.

347 N. Market st. (opposite Post Office).

Catalogues may be had at the Store; if sent for by mail, will be forwarded gratis. Orders solicited early, as the better practice can be done in the execution.

Mr. Thornburn is also Agent for the following publications, to wit:—

New York Farmer and American Gardener's Magazine.

Mechanics' Magazine and Register of Inventions & Improvements.

American Railroad Journal and Advocate of Internal Improvements; and the

New-York American, Daily, Tri-Weekly, and Semi-Weekly; either or all of which may be seen and obtained by those who wish them by calling at 347 North Market street, Albany.

TOWNSEND & DUFFEE, of Palmyra, Manufacturers of Railroad Rope, having removed their establishment to Hudson, under the name of Duffee, May & Co. offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J. B. Jarvis, Eng. M. & H. R. Co., Albany; or James Archibald, Engineer Hudson and Delaware Canal and Railroad Company, Carbondale, Luzerne county, Pennsylvania.
Hudson, Columbia county, New-York, {
January 29, 1835.

NOTICE TO MANUFACTURERS.

SIMON FAIRMAN, of the village of Lansingburgh, in the county of Rensselaer, and state of New-York, has invented and put in operation a Machine for making Wrought Nails with square points. This machine will make about sixty 6d nails, and about forty 10d nails in a minute, and in the same proportion larger sizes, even to spikes for shire. The nail is hammered and comes from the machine completely heated to redness, that its capacity for being clenched is good and sure. One horse power is sufficient to drive one machine, and may easily be applied where such power for driving machinery is in operation. Said Fairman will make, vend and warrant machines as above, to any persons who may apply for them as soon as they may be made, and on the most reasonable terms. He also desires to sell one half of his patent right for the use of said machines throughout the United States. Any person desiring further information, or to purchase, will please to call at the machine shop of Mr. John Humphrey, in the village of Lansingburgh.—August 15, 1833. A29 if RM&F

RAILWAY IRON.

Ninety-five tons of 1 inch by 1/2 inch,	Flat Bars in length 14 to 16 feet counter sunk holes, ends cut at an angle of 45 degrees with splicing plates, nails to suit.
300 do. 1 1/2 do. 1/2 do.	
40 do. 1 1/2 do. 1/2 do.	
300 do. 2 do. 1/2 do.	
300 do. 2 1/2 do. 1/2 do.	
soon expected.	

350 do. of Edge Rails of 36 lbs. per yard, with the requisite chairs, keys and pins.

Wrought Iron Rims of 30, 33, and 36 inches diameter for Wheels of Railway Cars, and of 60 inches diameter for Locomotive wheels.

Axles of 2 1/2, 3, 3 1/2, 4, and 4 1/2 inches diameter for Railway Cars and Locomotives of patent iron.

The above will be sold free of duty, to State Governments and Incorporated Governments, and the Drawback taken in part payment.
A. & G. RALSTON.
9 South Front street, Philadelphia.

Models and samples of all the different kinds of Rails, Chairs, Pins, Wedges, Spikes, and Splicing Plates, in use, both in this country and Great Britain, will be exhibited to those disposed to examine them.
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SURVEYORS' INSTRUMENTS.

Compasses of various sizes and of superior quality warranted.

Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by
E. & G. W. BLUNT, 184 Water street, corner of Maiden lane.

ENGINEERING AND SURVEYING INSTRUMENTS.

The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely new: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy; also, a Railroad Goniometer, with two Telescopes—and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.
WM. J. YOUNG,
Mathematical Instrument Maker, No. 9 Dock street, Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.
Baltimore, 1833.

In reply to thy inquiries respecting the Instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad. I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable.

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sights, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to lateral angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,

JAMES P. STABLER, Superintendent of Construction of Baltimore and Ohio Railroad.
Philadelphia, February, 1835.

Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors.
E. M. GILL, Civil Engineer.

Germantown, February, 1835.

For a year past I have used Instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these Instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY K. CAMPBELL, Eng. Philad.,
General and Novelist. Railroad

STEPHENSON.

Builder of a superior style of Passenger Cars for Railroads
No. 364 Elizabeth street, near Bloecker street,
New-York.

RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part of the New-York and Harlem Railroad, now in operation.
J 25 if

RAILROAD CAR WHEELS, BOXES AND AND OTHER RAILROAD CASTINGS.

Also, AXLES furnished and fixed to wheels complete at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to. Also, CAR SPRINGS.

Also, Flange Tires turned complete.

J8 ROGERS, KETCHUM & GROSVENOR.

NOVELTY WORKS.

Near Dry Dock, New-York.

THOMAS B. STILLMAN, Manufacturer of Steam Engines, Boilers, Railroad and Mill Work, Lathes, Presses, and other Machinery. Also, Dr. Nott's Patent Tubular Boilers, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited.
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INSTRUMENTS.

SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

EWING & HEARTT, at the sign of the Quadrant, No. 63 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude.

For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public, the following certificates from gentlemen of distinguished scientific attainments.

To Ewing & Heartt.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable. They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.
JAMES F. STABLER,
Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' Instruments of your Manufacture, particularly Spirit Levels, and Surveyors' Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These Instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.
WILLIAM HOWARD, U. S. Civil Engineer.

Baltimore, May 1st, 1835.

To Messrs Ewing & Heartt.—As you have asked me to give my opinion of the merits of those Instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming acquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unequalled approbation and our warm encouragement. Wishing you all the success which your enterprise so well merits, I remain, yours, &c.

B. H. LATROBE,

Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them, upon application, to any person desirous of perusing the same.

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An act authorizing a loan for the benefit of the people of this State. Passed April 19, 1834.

The people of the state of New-York, represented in Senate and Assembly, do enact as follows:

§ 1. The commissioners hereinafter named are hereby authorized, if, in their opinion, the public interest shall require it, by an order in writing signed by a majority of them and filed in the office of the comptroller, from time to time, whenever they shall deem it expedient, to direct the comptroller to issue special certificates of stock, in such manner, for such amounts, and under such restrictions as are hereinafter provided, for an amount not exceeding in the whole six millions of dollars; for the redemption of which, and the punctual payment of the interest thereon, as herein provided, to the owners of such stock, the faith and credit of the people of this state are hereby pledged.

§ 2. Upon the filing of every such order, the comptroller shall issue certificates of stock to the amount required thereby, in such sums and to such persons or bodies corporate as the said commissioners, or a majority of them, may direct, for the purpose of being loaned as hereinafter directed.

§ 3. The said commissioners are hereby authorized to loan so much of the said stock when so issued as aforesaid, or of the monies arising from the sale thereof, as in their opinion the public interest may require, to such of the incorporated banking institutions in the city of New York, as they shall deem proper, not exceeding in the whole four millions of dollars, and in such sums to each as they shall deem proper, not exceeding in amount to any one institution one half the capital stock of such institution, at a rate of interest not less than five per cent, payable quarterly yearly, upon its par value; and they said commissioners before they shall make any such loan, shall examine particularly into the affairs of such bank. And the said commissioners may also at their discretion, take such security for the punctual payment of said interest, and the ultimate payment of said principal, as they shall deem proper and necessary to insure such payments at such times as may be agreed upon, not extending beyond the time when the principal of said stock shall be reimbursable; but no part of the loan made to any banking institution, shall be repaid to the State, before the expiration of the period at which the stock shall be redeemable, unless such repayment shall be made in the stock created under this act.

§ 4. The said commissioners shall prescribe the form in which the said certificates of stock shall be issued; and the said stock shall be transferable at the pleasure of the owner, in such manner as the said commissioners shall direct.

§ 5. The said stock shall bear an interest of five per centum per annum, payable quarterly yearly at the Manhattan Bank in the city of New York, and shall be reimbursable at such time or times within twelve years from the passage of this act, as the said commissioners shall designate.

§ 6. The said stock shall be converted into money, in such manner, and under such regulations, as the commissioners hereinafter mentioned shall direct; but the amount of any premium received on such stock upon converting the same as aforesaid, shall be paid into the treasury of this State for the benefit of the general fund.

§ 7. The said commissioners hereinafter named, are hereby authorized to convert into money, by disposing of the same by auction or otherwise, in their discretion, a further amount of stock authorized by the first and second sections of this act, not exceeding two millions of dollars, and to pay the said money into the treasury of this State, the premium thereon to belong to the general fund, and the capital to be loaned to the citizens of the different counties of this State, except the counties in the first senatorial district, in the manner and subject to the provisions hereinafter mentioned, to wit:

1. The amount to be loaned in each county shall be ascertained by an apportionment of the whole amount of two millions of dollars, among such counties according to the number of inhabitants in each, as ascertained by the census taken in the year one thousand eight hundred and thirty.

2. No loan shall be made to the citizens of any county until an application therefor shall have been made to said commissioners by the board of supervisors of such county.

3. The monies to be loaned in each county shall be loaned by the "commissioners for loaning money" in such county, under the act of April 11, 1808; and where there shall be no such commissioners in any county, they may be appointed in the same manner, and shall hold their offices for the same term, and upon the same tenure as if appointed under said

act, and pursuant to the provisions of the revised statutes.

4. The commissioners of each county, before entering upon the duties of their office, under this act, shall take the oath of office as prescribed by the constitution of this State, and file in the office of the Comptroller a like bond as is provided for by the fourth section of the act last aforesaid, in addition to the bond required by that section in cases where that may now be required.

5. The principal moneys to be loaned under this act shall be payable at such time or times, within twelve years from the passage of this act, as the said commissioners mentioned in the eleventh section of this act, shall designate, and the interest thereon at the rate of six per centum per annum, shall be payable on the first Tuesday of May in each year; and the said commissioners for loaning money may retain out of the said interest, one-half of one per cent. for their compensation.

6. The said commissioners for loaning money shall keep separate books and accounts relating to the loan authorized by this act, distinct from their other loan office books and accounts, and in addition to the evidences of title required by said last mentioned act, it shall be the duty of the said commissioners to require of the borrower certificates from the proper officers, showing that there is no incumbrance upon the property proposed to be mortgaged on record in their offices.

7. Whenever any principal moneys loaned by said commissioners shall be paid in to them, it shall not be re-loaned, but shall be paid into the treasury of this State.

§ 8. The moneys to be realized from the stock authorized to be issued under the preceding section of this act, shall belong to the general fund of this State, and the interest upon said stock shall be paid out of the said general fund.

§ 9. Except as herein otherwise provided, all the provisions of the act aforesaid, entitled "An act authorizing a loan of monies to the people of this State," passed April 11, 1808; and also of the act to amend the same, passed March 29, 1809; and also the act passed April 21, 1825, entitled "An act to provide for the conveyance of land sold by a commissioner of loans under the act entitled 'An act authorizing a loan of monies to the citizens of this State,'" passed April 11, 1808; and also of the act, entitled "An act relative to the loans of 1786, 1792, and 1808, passed April 13, 1832," shall apply to the loans to be made under the seventh section of this act, in the same manner as if the moneys loaned constituted a part of the said loan of one thousand eight hundred and eight.

§ 10. Whenever upon the foreclosure and sale of any premises mortgaged to secure any loan made under the seventh section of this act, the said mortgaged premises shall not bring the amount due and to become due upon said mortgage with the costs of foreclosure and sale, the deficiency shall be reported by the commissioners making such sale, to the board of supervisors of the county, who shall at their next annual meeting, cause such deficiency and the interest thereon, to be raised as part of the contingent charges of such county, and paid over to the county treasurer whose duty it shall be to pay the same over to the said commissioners for loaning money.

§ 11. The commissioners of the canal fund, and the bank commissioner appointed by the Governor and Senate, shall be commissioners to carry this act into effect; but it shall not be lawful for them to require any issue of stock, as herein before provided, after the first day of February next.

§ 12. If the supervisors of any county in this State shall refuse or neglect, for three months after the passage of this act, to take said loan on the terms herein mentioned, the said commissioners may, in their discretion, loan the money appropriated to said county to any incorporated bank or banks in said county; and if there is no incorporated bank in said county, then the said commissioners may loan the amount apportioned to said county to any incorporated bank or banks in this State. Said loans mentioned in this section to be made upon the like terms and security as the loans mentioned in the third section.

§ 13. The clerk of the board of supervisors of the several counties in this State is hereby authorized to call a special meeting of the board of supervisors in their respective counties, on the application in writing of any three of the supervisors, giving at least six days notice to each supervisor of the time and place of meeting; and the said supervisors or a majority of them, when so met, shall have power to adjourn from time to time for the purpose of carrying into effect this act.

§ 14. This act shall take effect immediately on the passage thereof.

State of New-York, Secretary's Office.—This bill having been approved and signed by the Governor of the State, on the 19th day of April, 1834, I do hereby certify that the same became a law on that day.
JOHN A. DIX, Secretary.

NEW ORLEANS MARKET—April 15.

COTTON.—The following were the sales we heard of yesterday, viz:—800 bales Mississippi at 11½; 300 bales Alabama and Mississippi at 10½; 1300 bales Mississippi and Louisiana at 13½; 40 bales Louisiana and Mississippi at 11½; 17 bales do at 12; and 17 do at 14 cts.
Flour, \$3 12½ a 3 35; Pork, mess, \$11; prime, \$9; bulk pork, 2½ a 3c; Bacon, 4½ and 5½; Lard, 5 58 a 6½; Whiskey, 23 a 24c; Molasses, 21 a 22; Sugar, 5 a 6½; Corn, 67½ per bushel.—[Bulletin.]

VOL. III. OF THE RAILROAD JOURNAL AND ADVOCATE OF INTERNAL IMPROVEMENTS is published once a week in quarto form, with 16 pages to each number, at \$3; or in semi-monthly form, of 32 pages, stitched in a cover of colored paper, at \$4 per annum, in advance. The first and second volumes of the Journal may be had in two parts to the year, either stitched in covers or bound in boards, at the subscription price, with price of binding, in one part, 50 cents, in two parts \$1 per volume. Those in covers may be sent by mail to any part of the country, the same as a magazine. Published at No. 35 Wall st., New-York, by D. K. MINOR, Editor and Proprietor.

THE MECHANICS' MAGAZINE AND REGISTER OF INVENTIONS AND IMPROVEMENTS is now just commencing its second year. It will be continued in a manner altogether superior to that of the first year. It has drawn forth many valuable correspondents, in different parts of the country, with the assistance of whom, and those who may hereafter contribute to its columns, together with the ability of Mr. JOHN KNIGHT, formerly, and for several years, proprietor and publisher of the LONDON MECHANICS' MAGAZINE, who is engaged as Editor, the proprietor has no hesitation in saying that it will be found worthy of an extended circulation and a liberal support. The first year, or two first volumes, having been stereotyped, may now be had either in numbers, or bound in boards—either at wholesale or retail. Price \$1 50 per vol. in numbers, or \$1 75 in boards, or \$3 per annum. A liberal discount made to the trade. Published by the proprietor, D. K. MINOR, at No. 35 Wall st. N. Y.

THE NEW-YORK FARMER AND AMERICAN GARDENER'S MAGAZINE, has commenced the second volume of a new series. It is published once a month, in quarto form of 32 pages to each monthly number, at \$3 per annum in advance. The last volume may be had either stitched in a cover, so as to be sent by mail, or in boards. Price, stitched, \$3 25; in boards, \$3 50. Each subscriber who pays in advance, or previous to the first of April, free of postage or commission, will be entitled to eight additional pages to each monthly number, or 96 extra pages to the volume. Published at No. 35 Wall street, N. Y.; D. K. MINOR, Proprietor.
Jan. 22, 1834.

A QUARTERLY JOURNAL OF AGRICULTURE AND MECHANICS will hereafter be published at the same office. Each quarterly number will contain about 300 large octavo pages, embracing the most choice articles from the best agricultural and mechanical publications both in America and Europe. It will form 2 volumes to the year, of about 640 pages each, and will be put up like other quarterly publications, so as to be sent by mail. Price, \$5 per annum, in advance.

N. B. A small edition only will be published. Also, the PLOUGH-BOY, a cheap agricultural publication, of eight quarto pages, is issued once a week, at \$1 50 per annum, in advance. It contains much interesting reading upon agriculture, &c.

Also, the NEW-YORK AMERICAN, daily, tri-weekly, and semi-weekly.

§ All Letters and Communications for the above publications, may be addressed, free of postage, to

D. K. MINOR.

PATENT RAILROAD, SHIP AND BOAT SPIKES.

§ The Troy Iron and Nail Factory keep constantly for sale a very extensive assortment of Wrought Spikes and Nails, from 3 to 16 inches, manufactured by the subscriber's Patent Machinery, which after five years successful operation and now almost universal use in the United States (as well as England, where the subscriber obtained a Patent,) are found superior to any ever offered in market.

Railroad Companies may be supplied with Spikes having counter-sunk heads suitable to the holes in iron rails, to any amount and on short notice. Almost all the Railroads now in progress in the United States are fastened with Spikes made at the above named factory—for which purpose they are found invaluable, as their adhesion is more than double any common spikes made by the hammer.

§ All orders directed to the Agent, Troy, N. Y., will be punctually attended to.

HENRY BURDEN, Agent.

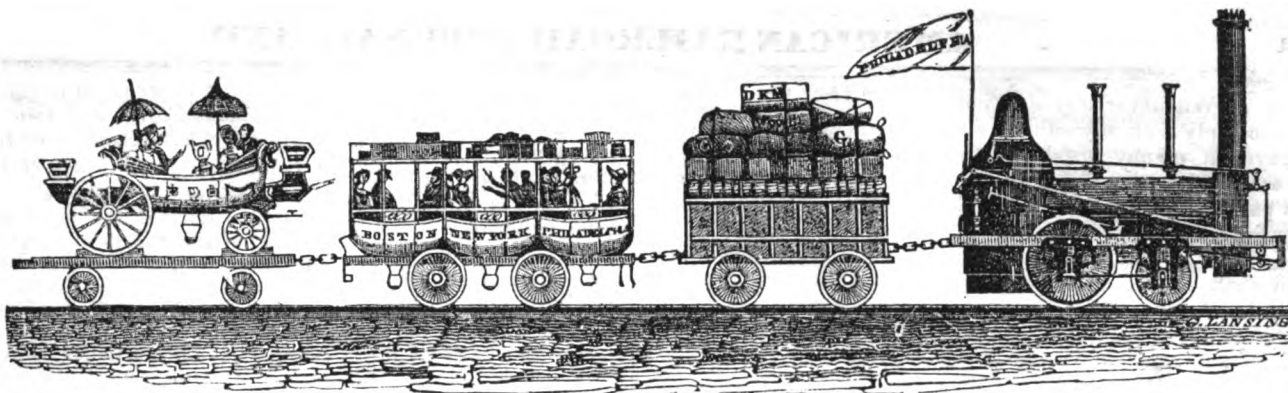
Troy, N. Y. July, 1831.

§ Spikes are kept for sale, at factory prices, by I. & J. Townsend, Albany, and the principal Iron Merchants in Albany and Troy; J. L. Brower, 323 Water street, New-York; A. M. Jones, Philadelphia; T. Janviers, Baltimore; Degrand & Smith, Boston.

§ S.—Railroad Companies would do well to forward their orders as early as practical, as the subscriber is desirous of extending the manufacturing so as to keep pace with the daily increasing demand for his Spikes.

Jas. Lam

H. BURDEN.



AMERICAN RAILROAD JOURNAL, AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT No. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, EDITOR.]

SATURDAY, MAY 10, 1834.

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, MAY 10, 1834.

SURVEY OF THE NEW-YORK AND ERIE RAILROAD ROUTE.—We are gratified to announce that the Bill which we formerly noticed as being before the Legislature of this State, directing a complete survey at the public expense of the proposed Railway from this city to Lake Erie, through the southern tier of counties, has become a law.

This is a measure of great public importance, and of peculiar interest to this city and to the southern tier of counties: and we design to give it a more extended notice in a subsequent number.

SLOOP CANAL.—Our friends in Oswego are looking forward to a more ready communication between the Atlantic and our great inland seas. We publish to-day the report of a committee upon the project of a Sloop Canal from Lake Ontario to the Hudson.

A Railroad is in contemplation, and will, no doubt, soon be commenced, from Columbus to Augusta. This will so connect the latter place with Charleston, that the communication between Charleston and Columbus will be made in 26 hours—allowing 12 from Charleston to Augusta, and 14 from Augusta to Columbus. From Columbus to Pensacola, 20 hours is a liberal allowance of time. From Pensacola to some suitable point on Mobile Bay, the mail could be carried in 7 hours over land in stages, and thence to New-Orleans, a distance of 160

or 170 miles, in steamboats, it could be carried in 16 hours, making in all *two days and twenty-one hours* from Charleston to New-Orleans. To this add the time required by the steam-packets running between Charleston and New-York, (72 hours,) and the result shows that, with the aid of our Railroad, and that from Augusta to Columbus, to connect with the railroad already completed from Charleston to Augusta, the communication between New-York and New-Orleans would be made in *five days and twenty-one hours*.

To these facts, which ought to be impressed upon every mind, it is proper to add, that there is perhaps no country equal in extent in the Union, over which a railroad could be constructed at so small an expense as over the route from this place to Columbus. It is a level ridge throughout the whole distance, and the choicest timber for the construction of such a work is growing in the greatest abundance upon the very ground which the railroad would occupy.—[Pensacola Gazette.]

DELAWARE AND RARITAN CANAL.—On the 28th, two boats, loaded with coal, from Mauch Chunk, arrived at the Easter Basin in Trenton, via the Delaware Canal, Penn. They came up the river from Bristol, and entered our canal at Bordentown.

These are the first arrivals at Trenton from Mauch Chunk, by the canal. The feeder, we understand, is navigable to Lambertville for boats. The main Canal is also navigable for boats from Bordentown to Kingston; several with lumber have passed from Trenton to Princeton or Kingston this week, and a number have come down the feeder loaded with stone for the new Penitentiary.—[Trenton State Gazette.]

WISCONSIN PORTAGE CANAL.—By the following act of the Legislative Council of Michigan, it will be seen that a regular water communication is to be opened between Fox and Wisconsin rivers, or between Green Bay and the Mississippi at Prairie du Chien:

AN ACT TO INCORPORATE THE PORTAGE CANAL COMPANY.

SECTION I. *Be it enacted by the Legislative Council of the Territory of Michigan,* That such persons as may hereafter become stockholders therein, shall be, and they are hereby declared to be, a body corporate and politic, under the name and style of "the Portage Canal Company," and as such corporation they are hereby declared capable of suing and being sued, answering and being answered unto, impleading and being

impleaded, defending and being defended, in all courts and places whatsoever, and in all manner of actions, suits, complaints, matters, and causes whatsoever: And the said company shall have continued succession for the term of twenty-five years, and may have a common seal, and change the same at pleasure, and shall be in law capable of purchasing, holding, and conveying any estate, real or personal, for the use of said corporation.

SEC. II. The capital stock of said company shall be fifty thousand dollars, to consist of one thousand shares of fifty dollars each; and books to receive subscriptions towards constituting said stock may be opened by each of the following persons: Daniel Whitney, Charles R. Brush, Daniel Jackson, John P. Arndt, Henry G. Soulard, Nathan Godell, and John Larre, who are hereby appointed the first directors, and are authorized to elect their president from their own number, and to conduct every operation of said company until the first Monday in September next; and the subscriptions aforesaid shall continue open until the whole number of shares are subscribed; and if the subscriptions to the said capital stock shall on the first Monday in September next exceed the amount authorized by this section, it shall be the duty of the directors to meet and apportion the said stock among the subscribers thereto, in such manner that no person may have less than five shares if he subscribe for so many.

SEC. III. Five dollars on each share shall be paid at the time of subscribing to the said directors, and the balance in such instalments and at such times as the directors for the time being may require: Provided, that no instalment shall exceed ten dollars on each share; and previous notice shall be given whenever the payment of any instalment is required, by advertisement in a newspaper, printed three successive weeks, in the Territory or State in which the said canal is situated. The shares of the capital stock shall be deemed personal estate, and transferable in such manner as shall be prescribed in the by-laws of said company.

SEC. IV. The said directors may commence and continue the operations of said company, as soon as they may think the stock subscribed sufficient therefor.

LEGISLATURE OF NEW YORK.

In Assembly, April 14, 1834.

Report of the Select Committee on the Petition of Inhabitants of the County of Oswego.

Mr. O. Robinson, from the select committee to whom was referred the petition of sundry inhabitants of the county of Oswego, praying for the passage of an act directing the exploration and survey of an improved navigation from Lake Ontario to the Hudson river, adapted to the tonnage of vessels navigating those waters, and proportioned to the capacity of the supply of water from the lakes, rivers, and streams which may be made tributary thereto, and for a plan and estimate of the cost of the same; and for a survey, plan, and estimate of an improved navigation of the same capacity of the Seneca river, to its communication with the Seneca and Cayuga lakes, and for a report thereof to the next Legislature,

REPORTED:

That the subject referred to the committee, in whatever light it may be viewed, may justly be considered of the first importance, both to the enterprise and interest of the State of New-York. The citizens of this State have witnessed with high satisfaction the commencement, completion, and successful operation of the Erie canal, which has more than answered the expectations of its ardent and patriotic projectors. The value of property has been multiplied many fold; the arm of industry has converted the almost interminable regions of the forest in the western part of the State into fertile fields, enriching alike the hardy cultivator and the great commercial emporium of the State; cities and villages have arisen as if by enchantment, where, but for the Erie canal, would now have been a wilderness. Great and important have been the results of these works of internal improvement, not only to this State, but to a portion of the territory bordering upon the basin of the great western lakes. Let it not be supposed that the resources of western New-York are exhausted, or that she has arrived at that point in commercial and agricultural enterprise beyond which she cannot and will not pass. The spirited and enterprising citizens of that section of the State are now calling the attention of the Legislature to the construction of a canal from Rochester, up the valley of the Genesee, to Olean on the Allegany, the distance of 96 miles. Another project of equal importance is now in contemplation to unite the fertile regions of the north with the valley of the Mohawk, by means of a canal from Rome to the high falls of the Black river. Complete the Chenango canal and the improvements already commenced, double the locks upon the Erie canal east of Syracuse, construct those canals in contemplation, and your committee confidently predict, that in ten years the Erie canal will not be adequate to the business of our own State, and the products of the west will be forced to find an outlet to the Atlantic through some other channel.

Three great objects were primarily contemplated in constructing the Erie canal: First, to furnish the citizens of this State with an easy and cheap conveyance of their surplus produce to market; second, to secure and preserve the trade of the west; third, revenue.

The first of these objects has been attained, and the attention of your committee has been principally directed to a consideration of the second. That to secure and preserve the trade of the west is an object worthy the continued exertions and resources of the "empire State," cannot and will not be denied; that it is so secured may well be doubted. The importance of the western trade will be seen by a view of the vast extent of country bordering upon and surrounding the western lakes, a region of country more fertile and productive than the sun in his course through heaven does not shine upon. If we glance an eye over the immense regions connected by the western lakes

SEC. V. Whenever any stockholder shall fail to comply with any call or demand for the payment of any instalment, he or she shall forfeit his or her shares, and any previous payments made thereon; and it shall be lawful for the said company to make division of the surplus capital and net profits which shall accrue thereon from time to time, in such manner as the directors shall see fit, or to employ the same in the purchase of any stock of any company incorporated by the laws of the Territory, or in any other manner to dispose and use the same for the benefit of the stockholders therein: Provided, that nothing herein contained shall confer upon said company banking privileges.

SEC. VI. The said company shall within five years after the passage of this act construct and complete a canal to connect the waters of the Fox and Wisconsin rivers, at or near the place known as the "Wisconsin Portage," in the counties of Brown and Iowa, of sufficient depth and width to admit the passage of such craft as are usually employed in the carrying trade on the said rivers, and properly secured at the extremities by guard-locks, or such other means as may be requisite to prevent the flowing, by means of said canal, of either of said streams into the other: Provided, that nothing in this act contained shall be so construed as to give to said company any privilege which might tend to impair the facilities which at present exist for the passage of boats and property on the said portage, but the same shall remain in as simple a manner as if this act had not passed.

SEC. VII. The election of directors shall take place annually the first Monday in September, and public notice thereof shall be posted up in three public places, or published in a paper printed in the county of Brown, for three weeks previous to the time of holding any such election. At the time and place appointed in said notice, the stockholders present, either in person or by proxy, shall proceed to elect by ballot seven directors, who shall hold their offices for one year, and until others are elected in their places, and are qualified. The said directors shall immediately on their election, or within ten days thereafter, take an oath, or affirmation, for the faithful discharge of their duties, and shall, by a majority of vote, select one of their number to be president; and the said president and directors may meet from time to time, at such places as they may find expedient, and shall have power to conduct by a majority all the concerns of said company, to make such by-laws, rules, and regulations, not repugnant to the laws of the United States, or of this Territory, as they shall deem necessary for the well ordering of the affairs of the said corporation, and in case of vacancy by death, or resignation, or otherwise, in the office of director, the other directors in office may supply such vacancy by a majority of votes until the next annual election. The president and directors may appoint a president *pro tem.*, to preside at said meetings, and to do all other acts that the said president might or could do.

SEC. VIII. In case any election shall not be held at the time when the same ought to have been held, the directors in office shall appoint another day for holding the same, giving the like notice required of any annual election: Provided, the said directors in

office shall be incapable of transacting any other business except in regard to said election after the annual election day.

SEC. IX. Five directors shall be a quorum to transact the business of said company, and any acts of the majority so met shall be binding upon the company; and the said directors shall have power to appoint and remove at pleasure such sub-officers, agents, clerks, artists, and workmen, as shall be necessary for executing the business of said company.

SEC. X. The company shall have power to erect piers, wharves, warehouses, and other necessary buildings and improvements, in and about said canal for commercial purposes.

SEC. XI. Said company shall be compelled at all times to allow the passage of any boat or water craft through said canal, upon the demand of any person, on payment of such toll or duty as the directors of said company may prescribe: Provided, that the toll to be exacted for the passage thereof shall never exceed five cents per hundred for any property which may be transported thereon, or forty cents per ton burthen for any boat or other craft which shall be admitted through said canal: Provided further, that the tonnage of no boat or other craft, which shall be admitted through said canal, shall be estimated at less than three tons burthen; and said directors are hereby authorized so to estimate all boats or water craft of less than three tons burthen, and to charge toll accordingly; but if more than one boat of less than three tons burthen shall be ready to pass said lock at the same time, they shall be received until the lock is full, and no more toll than for three tons burthen shall be charged upon the whole, unless their tonnage shall actually exceed three tons.

SEC. XII. The privileges granted by this act shall be vested in said company for the term of twenty-five years: Provided, that the said canal shall be completed on or before the ninth day of March, which will be in the year eighteen hundred and thirty-nine.

SEC. XIII. Said company may purchase any land, or lands, of the owners thereof, through which said canal may pass, but no part of this act shall be so construed to give any right to said company to occupy the land of any individual or individuals without first obtaining their consent.

SEC. XIV. The property of every individual vested in the said corporate funds shall be liable to be taken in execution for the payment of his or her just debts, in such manner as is or may be prescribed by law: Provided, that all debts due to said company shall be first paid and discharged.

Approved March 7, 1834.

Territory of Michigan, ss.

This shall certify to all whom it may concern, that the foregoing is a true copy of the original act, entitled "An Act to incorporate the Portage Canal Company," now on file in the Office of the Secretary of Michigan Territory.

L. S.

In testimony whereof I have hereunto set my hand and affixed the Seal of the Territory, this 10th day of March, A. D. 1834.

STEVENS T. MASON,
Secretary of the Territory.

and their tributary streams, if we regard the fertility of soil, the multiplicity of product, which characterize those regions, and if we combine these advantages afforded by nature with the moral energy of the free and active people who are spreading their increasing millions over its surface, what a vista through the darkness of time opens upon us! We see arts, science, industry and social happiness already increasing in those countries, beyond what the most inflated fancy would have dared to hope, thirty or forty years ago.

As yet the commercial and agricultural resources of the west are not developed. These twin sisters of the wealth of nations are yet in their infancy. Owing to the rapid increase of population in Ohio, and the wild and uncultivated state of a portion of her territory, the surplus productions of her farmers have until recently been consumed within her own territory. Michigan and Illinois, comparatively speaking, have furnished nothing for transportation; but when their exhaustless soil shall be cultivated and improved by the hardy and industrious yeomanry of the north and east, who are emigrating thither to a degree unprecedented in the annals of our country, their rich productions will be put afloat and will find a market upon the shores of the Atlantic, through such channel as presents safety, cheapness and speed, and to the most advantageous market. The citizens of the west have witnessed the commencement, progress, completion and effect of the splendid system of internal improvements in this State, and are nobly imitating the example with an enterprise and zeal worthy their character. Already are the head waters of the Mississippi connected at different places with the great chain of western lakes, by means of canals and railroads. The channels of communication now opened, and which will hereafter be opened between the lakes and the interior, will be thronged with vehicles of transportation, conveying the rich fruits of the labors of millions of free and happy people to flourishing cities and villages upon the shores of the lakes, whose population, wealth, and enterprise, will be equalled only by those upon the shores of the Atlantic.

The surplus productions of this extensive region will find their way to the Atlantic. Natural communications possess facilities and advantages which artificial never will and never can. Lake and river navigation is being understood. Steam power has changed every thing. Twenty-three by-gone years have witnessed improvements in commercial facilities in our own State which have claimed the admiration and imitation of the world.

The lethargy under which the people of Canada have slumbered for the last century has been thrown off, and they are now fully awake to the importance of internal improvements. They are beginning to appreciate the natural water communications with which nature has so bountifully supplied them. They have entered the lists and are nobly contending for a participation in, if not a monopoly of, the rich dowry of the western trade. Their enterprise has caused a communication to be opened around the Falls of Niagara, a distance of forty-one miles, by which vessels carrying 1,000 barrels of flour can go through without being lightened, at an expense of one cent per barrel, exclusive of tolls. The amount of business done upon this canal will be seen by reference to the fact, that 5,000 barrels of salt passed through during the last season, and had the requisite repairs been made, so as to have opened the canal with the commencement of lake navigation, the revenue would have amounted to more than 50,000 dollars.

The evil which the Canal Commissioners feared in 1812 now really exists. The produce designed for transportation upon the Upper Lakes is now let down to Lake Ontario by means of this canal with facility, and for a trifling expense. The prediction of the Canal

Commissioners, "that articles for exportation, when once afloat on Lake Ontario, would, generally speaking, go to Montreal, unless our British neighbors were blind to their own interests," is now fully verified. By a reference to the parliamentary proceedings of the Canadas during the last winter, it will appear obvious that they are not thus blind; that, on the contrary, they duly appreciate the importance of this trade, and that the greatest industry, activity, and talent, are employed in the attainment of further improvements on the most magnificent scale. Appropriations have already been made for the improvement of the St. Lawrence, by which it is intended to connect the Atlantic with the lakes by ship and steamboat navigation. Let them make the Welland canal and the St. Lawrence navigable, as they purpose to do, and which they will do, for steamboats, and Cleveland will be within a sixty hours' ride of Montreal. When these improvements are completed, vessels of 300 tons can load at Chicago, at Cleveland, at Detroit, at Oswego, and other ports on the lakes, and deliver their cargoes at foreign ports. When direct exportation has once succeeded, direct importation will follow as a matter of course. When the Welland canal shall be completed, and the St. Lawrence improved, as designed, goods may be delivered at Cleveland from London for less than one-half what it now costs by the way of New-York and the Erie canal. Make the Erie canal a public highway, and the Canadian route will be preferable by one-quarter in point of expense. The vast superiority in the great point of economy in transportation, effected upon natural water communication, admitting of navigation by large vessels or steamboats, above transportation upon canals and railroads, has been satisfactorily proved by experience on the Hudson, the lakes, and the great rivers of the west. Even at the present reduced rates of toll upon the Erie canal, river transportation has the advantage by more than 300 per cent. The charge upon the transportation of wheat, per bushel, from Troy to New-York, is three cents, while the same transportation for a like distance upon the canal cannot be effected for less than ten cents.

The importance of the western trade has aroused a spirit of enterprise and competition in sister States. To participate in this trade, rival canals and railroads have been constructed in Pennsylvania, Maryland and Virginia, and it cannot be denied that these are already diverting a part of that trade from its natural current towards the lakes and the Erie canal, and will no doubt continue to produce such diversion in a ratio regularly augmented in their progress to completion. It cannot be questioned that a great portion of the produce and merchandize going to and coming from the fertile countries at some distance south of the great chain of the lakes, and east and north of the tributary streams of the Mississippi, must find their way into Virginia, Maryland and Pennsylvania. To prevent this diversion, the tolls upon the Erie and Ohio canals have been very judiciously reduced during the present winter.

The State of Pennsylvania has already declared, through one of her Senators in Congress, (Mr. Wilkins,) during its present session, her determination "still to go on in the advancement of her great system of internal improvements. She would not stop short in her great works. No combination would have the power to arrest her progress, until she should have accomplished her ultimate object, of depriving the empire State of New-York of all the carrying trade of the west. To this great point Pennsylvania was rapidly advancing, and under the wise administration of her State Government, she would not stop short of its accomplishment. She was engaged in an honorable rivalry with the empire State of New-York for the rich dowry of the western trade, and she would not stop until she should

have obtained the treasure." These works, then, which have cost Pennsylvania such enormous amounts, will be sustained, should they pay nothing but the annual repairs required to keep them in order. But Pennsylvania has obstacles to surmount of no ordinary character, before she will witness the consummation of the objects declared by the honorable Senator. Nature has interposed an insurmountable barrier to the construction of canals from the navigable waters leading to her commercial emporium and the Ohio. That Pennsylvania does possess advantages over New-York cannot be concealed or denied. Their canal and railroads were in successful operation for the present season before the 20th of March last, while our canals must remain closed by the frigid laws of nature, on an average of seasons, until the middle of April. Goods were delivered at Pittsburgh on the 26th of March, in eleven days from Philadelphia, and before our canals are opened, will be delivered at the Sault St. Marie or Chicago. It is said too, that the Pennsylvania route possesses a decided advantage, in point of time and expense; that merchandize can be delivered in fourteen days at Cincinnati from Philadelphia, while from New-York, by the Erie and Ohio canals, it will require from twenty to twenty-five days, and frequently much longer; and that the expense of transportation from Philadelphia to Cincinnati, during the present season, will be \$1.80 per hundred, while from New-York to Portsmouth on the Ohio \$2.06.

That the trade of the west is of vast importance, and is becoming yearly more and more important to the commercial interests of this State, cannot admit of doubt; and that there is danger of its being diverted, or a portion of it at least, through other channels than the Erie canal, to the Atlantic, your committee think is equally apparent.

In the spirit of enterprise and rivalry with which our southern and northern neighbors are actuated, your committee see no cause for serious apprehension, jealousy, or alarm, because they believe it is within the power of this State to secure the trade of the west beyond the reach of competition or rivalry.

The remedy and only remedy which can be applied to secure to ourselves and posterity this rich inheritance of national wealth, is by opening a communication between the Hudson and lakes Ontario, Seneca, Cayuga and Onondaga, of sufficient magnitude to admit the passage of the smaller class of steamboats, and of the ordinary vessels which navigate those waters. The advantage to be derived from such a communication must be apparent to all. It will combine safety, cheapness and expedition, the three great considerations in commercial enterprise, and save the loss and expense attendant upon numerous transshipments.

That such a communication is entirely practicable, your committee entertain no doubt. Whether the object can be better accomplished by improving the Mohawk river, Fish creek, and from thence into Onondaga lake and down the outlet to Three River point, and thence down the Oswego river to Lake Ontario; or by enlarging the Erie canal and the Onondaga lake side cut, and thence to Lake Ontario by the Onondaga lake and river, and the Oswego river, your committee are unable to form an opinion, not possessing the requisite information. Upon the practicability and necessity of carrying this project into execution, your committee have been referred to a communication from Benjamin Wright, Esq., late chief engineer of the New-York canals, addressed to Joseph Bloomfield, Esq., which is hereto attached, and to which they beg leave to refer, as a paper containing much valuable information.

As to the expense of opening such communication, your committee possess no correct information upon which to base an opinion.

Comparing, however, the estimates of Judge Wright in relation to the St. Lawrence canal, and estimates which have been made as to the expense of opening all the proposed channels of communication from Utica to Oneida lake, and from thence to Ontario, Onondaga, Cayuga and Seneca lakes, (which latter is estimated at less than \$900,000,) the cost will, when contrasted with the important results, be but trifling.

The amount of revenue to be derived from transportation is difficult to be imagined, and much more difficult to be ascertained. Judging, however, of the future from the past and the present, we may safely come to the conclusion, that ten years will not elapse, after the completion of the proposed project, before we witness the same busy scenes upon its waters that we do now upon the Erie canal. Calculation, like our advance in numbers, outruns fancy. "Things which twenty years ago a man would have been laughed at for believing, we now see. At that time, the most ardent mind, proceeding on established facts by the unerring rules of arithmetic, was obliged to drop the pen at results which imagination could not embrace."

The Erie canal is but a carrying place between the Hudson and the great lakes. It bears about the same proportion to the amount of business which is done between those waters now, as the Great Western turnpike did twenty years since. Proportionably to the wants of the country it affords about the same facilities.

Your committee here adopt with satisfaction, and in their opinion with particular propriety, the language of the Canal Commissioners, in their report before referred to. "The life of an individual is short. The time is not distant when those who make this report will have passed away. But no term is fixed to the existence of a State, and the first wish of a patriot's heart is, that his own may be immortal. But whatever limit may have been assigned to New-York by those eternal decrees which established the heavens and the earth, it is hardly to be expected that she will be blotted from the lists of political societies before the effects here stated shall have been sensibly felt. And even when, by the flow of that perpetual stream which bears all human institutions away, our constitution shall be dissolved and our laws be lost, still the descendants of our children's children shall remain. The same mountains will stand, the same rivers run, new moral combinations will be formed on the old physical foundations, and the extended line of remote posterity, after a lapse of two thousand years, and the ravage of repeated revolutions, when the record of history shall have been obliterated, and the tongue of tradition, the shadowy remembrance of ancient events into childish tales of miracle, this national work shall remain. It shall bear testimony to the genius, the learning, the industry and intelligence, of the present age."

It is unnecessary for your committee to dwell on the advantages which the commerce of the State must derive from opening a scene so vast to its incessant activity, and so the influence which must result from holding beyond the reach of rivalry and competition, a key to the commerce of our western world. They are known and will be duly appreciated by the intelligent people of this State.

Deeply impressed with the importance of the subject, your committee are of opinion that speedy measures ought to be adopted to carry into effect the prayer of the petitioners. In pursuance of these views and opinions, your committee have prepared a bill, which they now ask leave to introduce.

DOCUMENT.

Letter from Benjamin Wright, Esq.

New-York, April 1, 1834.

Dear Sir,—Your favor of 29th ult. is before me, and I will endeavor to give you all the in-

formation in my power touching the subject of your letter. The project which the Canadians have in hand to make a steamboat canal of 10 feet water, to pass all the rapids between Montreal and Ogdensburg, or Lake Ontario, is one which has a very important bearing, in its consequences, upon the people of the State of New-York, and the Erie canal tolls. It is certain to my mind, that with such a canal as I have projected along the St. Lawrence, and the Welland canal, in good order, that all the products of the soil, from all the Upper Lakes, can be carried to tide water *a great deal cheaper by this route than they can ever be done by the Erie canal*, or any other work.

The plan of the improvements as projected along the St. Lawrence, is to make short canals and locks around the rapids, leaving the steamboat to navigate the river and lakes in all the intermediate spaces. The whole length of all these canals, (although in seven or eight different pieces,) does not exceed 31 miles and about 175 feet of lockage. This can be executed for about three millions dollars, and completed in three years from the time it is commenced, if they choose to do so.

That the Welland canal can and will be put in good order, there is no doubt, as it appears by the measures adopted at the late session of their parliament, that they intend to make it a government work, and will no doubt do so next winter.

The question now arises, what shall be done by the state of New-York to retain the trade of the Upper Lakes to her great commercial port, under all these views of the matter? I see no better plan than your memorial, adopted by the people of Utica, suggests, viz.: by a large canal to the Oneida lake, or rather to a certain point on Fish creek, where 8 feet water can be at all times carried to the lake; thence through the lake, and down the outlet to Three Rivers, and then down the Oswego river. And I see by your letter, that your views extend to branching off up the Seneca river, to Cayuga lake: this would be a very good addition to the whole project.

You ask me to give my views of the expense of such a work from Utica to the Oneida lake, upon the plan you propose, of 60 feet canal width and 8 feet depth, with locks the size of the Welland canal, which is 110 feet by 22 in the chamber.

As I know the country well, from having surveyed it, I see no point of extra expense in the canal, except in passing the Rome summit, and the plan of getting over Oriskany creek, Sedaque; these latter, I do not think, would present any very formidable obstacles to good engineers; but I have not sufficiently digested a plan of the project that would enable me to even approximate the expense. I know that you must look for water either from Fish creek, to the Rome summit, or from Black river. The former would not be expensive, as I know, and have surveyed, a route where it may be brought easy and cheap.

This project would, if executed, enable vessels of 130 to 140* tons, to navigate on the large rivers and lakes with sails, and on the canals be towed by horses, or it would permit steamboats of certain construction, with wheel in stern, to pass through—such boats, from a model I have seen, would carry 100 tons of goods or produce.

The expense of such a project can only be known by a regular survey, and such survey ought to be made by an engineer who knows the formation of the whole country and can adapt his plan to a good and cheap work, and overcome the various difficulties best.

I have not said any thing about the competition which is to be looked for from Pennsylvania, if she goes on to form a connection between her canal at Pittsburgh with the Ohio canal at Akron. This latter place is about 40 miles

* Vessels of this tonnage measurement will carry 250 tons dead weight.—J. E. B.

from Cleveland, on Lake Erie, and we see already that Pennsylvania has been this year navigating her canals since about the 10th of March. The truth is, and we ought not to disguise it, that Pennsylvania can navigate three or four weeks earlier than we can, and even Canada can open her Welland canal nearly one month earlier than we can our Erie canal, and the St. Lawrence canal can be navigated earlier than our canals if they pay a little attention to management to clear the ice. That the project of making a canal of the size I have named from Utica to Oneida lake is *feasible at an expense not alarming, is certainly true*; indeed, with the exception of the difficulties at the summit and east of it, all the country is as favorable *as you can wish or desire*. That such canal will be able to transport much cheaper than the present canal, taking into consideration that such a large portion of distance between Oswego and Utica is natural waters, there can be no doubt; and that the time will soon arrive when we must expect competitors for that lake trade, is also certain; and in the race for this important object, it is of vital importance that we should have early and sound information on every point relating to this matter, so as to act promptly and definitively when we do act, cannot be doubted.

If such a project was well executed so far as from Oswego to Utica, there is no doubt its advantages would be such as to show the propriety of conveying it on to some proper point of the Hudson, and then we should see whether we cannot compete successfully with any of our neighbors, north or south of us. The prize contending for is a grand one, and well worthy of the exertions of the state of New-York.

Permit me to make one remark before I close as to the Oneida river, below Oneida lake. I have understood that some surveys have been made to estimate the expense of overcoming the three rapids in the 18 miles of this river between Oneida lake and Three River point. Let me say that great care is necessary, to prevent injury to the country, by dams, across this river, which I have heard is the plan proposed. There is a great extent of flat country along this river, and no dams ought to be made on any account. From a perfect knowledge of this river, and the country along it, I am decidedly of opinion that the improvements ought to be by short canals and locks. One at the outlet of the lake would be about one mile, one at Cockederoy $\frac{3}{4}$ mile, and one at Oak Orchard, say one mile, all the other parts of the river are, or may easily be made, 8 feet water, and this would do no injury to the country.

I have suggested the above from my wish to see every improvement of this kind, when attempted, done right, and I know too well the evils to a country to have a pernicious plan of such works adopted.

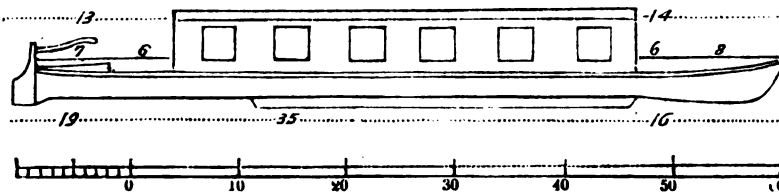
I am not perfectly satisfied with the size of the locks and canal as you proposed, I should prefer locks 24 and 26 feet wide and a canal not less than 75 to 80 feet on the surface. However, this is a future consideration, and when orders are given for the survey, the estimate can be made on as many different plans as shall be thought advisable.

With great respect and esteem, I am, dear sir, your obedient serv't,

BENJ. WRIGHT.

JOSEPH E. BLOOMFIELD, Esq.

THE RAILROAD.—We learn with pleasure that the Tusculumbia, Courtland and Decatur Railroad Company has agreed that their road may form a link in the grand chain of internal improvement, by which it is contemplated to unite the Atlantic Ocean with the Mississippi river, at some convenient point above New-Orleans.



The Paisley Canal Passage-Boats. By JAMES WHITELAW. [From the London Mechanics' Magazine.]

Sir,—As your correspondents have been requested to forward to you information respecting the light gig-shaped boats lately introduced upon canals, I send you the following account of the Paisley canal passage-boats, from which account I think it will be seen that the skiffing, or rising to the surface of the water principle, so much insisted on by Mr. Macneill, has little to do with their quick rate of sailing.

Description of one of the Boats.—The length is 70 feet, width 6 feet, and 1 foot 10 inches is the depth. With ninety passengers, which is as many as a boat can conveniently take, the draught of water is 19½ inches; when all the passengers are out the draught is only 5½ inches. The rudder is 2 feet long and 20 inches deep, and its bottom is in a line with the under side of the keel. The weight of the iron work is 17 cwt.; and the weight when the boat is finished is 33 cwt. The prefixed figure is a side view of one of the boats. The windows in front light the cabin, and those behind are for the steerage. The part at the bow marked 8 feet, is a deck for the passengers, and the part marked 6 feet, has seats round it. The 6 feet towards the stern is for the same purpose as the 6 feet feet in front, and the 7 feet is a deck on which the steersman stands; under each deck is a place for any light luggage. The keel is 35 feet long, the part in front (under the boat) marked 16 feet, and that behind, marked 19 feet, have no keel; this allows the boat to turn quicker. A line stretched from the highest point in the bow to the highest point in the stern, would rise about 6 inches above the lowest part of the gunnel. The depth of the keel is 5 inches; and this depth did not form part of

the measures given above, of the draught of water, and the depth of the boat. The plates are of 16th wire-gauge. The ribs are made of light gunnel-iron; and a rim of the same goes round the inside of the top edge of the boat, on which the wooden gunnel is fixed by means of square-headed screws. There are light ribs of wood laid inside of the boat, on which the flooring is nailed, and a broad stripe of wood runs between the seats and the windows, so high that the passengers may rest their backs upon it. The cotton oiled cloth, which covers the cabin and steerage, requires three very thin coats of boiled oil to make it water-tight, and it should be dried in the sun if possible: very light curved ribs, set about two feet apart, support the cloth overhead, and it is fixed to the frames of the windows, &c., at the sides of the boat. A boat of this kind can be finished in a most comfortable style for £130. The cost of the iron-work is £70, and £60 will pay the joiner and other work of the boat.

The hooks (there is one on each side), on which the towing-line is fixed, are fastened to the gunnel of the boat at about 15 feet from the bow; the rope is put on one of these, when the boat is not very much loaded; but when there are a great many passengers, the rope is fixed about 3 feet 6 inches nearer the bow; this helps the boat round the turns on the canal. The shape of the hook is as represented in the following sketch, to prevent the rope, any time it slacks, from falling off.



As the Paisley canal is a very winding one, the longest towing-line that can be used on it is as follows:



a, is the end connected to the boat; b, is fixed to the one horse, and c, to the other. If the rope were longer than this, it would draw the boat against the side, at a quick bend on the canal. The horse in front has blinders on it, and a boy rides on the one behind. The harness must be as light as possible. If the horses are run 12 miles a day, they keep in excellent order, but 16 miles per day is too much for them. The horses are changed every 4 miles. Half blood horses, or a breed between half blood and full blood, answer best.

The canal is 30 feet wide, except at the bridges, where it is only 11 feet, and there are two or three more contracted places on it, of considerable length. The average depth of the canal is 4 feet 6 inches. The sides of the canal are lined by a perpendicular wall, built of small stones, which goes 10 or 11 inches below the surface of the water, and as much above it. The distance from Glasgow to Paisley is 7½ miles by the canal, and the distance from Glasgow to Johnstone is more than 11 miles. The boats run the distance between Glasgow and Paisley in 50 minutes, and take in and put out a good many passengers at different places on the way; and the distance from Paisley to Johnstone is run over in a time proportionably short. The cabin fare is 9d., and the steerage fare is 6d., from Glasgow to Paisley. When passengers go from Glasgow to Johnstone, they

are charged 1s. in the cabin, and 9d. in the steerage.

The best speed for the Paisley canal boats is greater than 9 miles an hour; and this velocity occasions a very little and gradual swell, not more than 7 inches high on the canal; there is no wave whatever at or before the bow of the boat, and the water is lower than the surface of the canal just behind the bow; it then begins to rise, and the wave reaches its maximum elevation at about two-thirds of the length of the boat from its bow; at the stern the elevation of the wave is nothing, and any ripple that follows the boat is occasioned by the action of the rudder to turn the boat. At the best velocity the horses have not a heavy pull; but when the boat is drawn so slow as 6 or 7 miles an hour, the strain on the towing-line is very great, and waves rise in front of the boat more than 18 inches high, and wash over the banks of the canal. On account of the boat's being so light, it may be brought from its maximum speed to a state of rest without raising a wave in front; and for the same reason it may be brought from a state of rest to its greatest speed before a very high wave has time to rise. At the bridges the wave at the side of the boat is rather more than 9 inches high when the boat is going at its best velocity; and when two of the boats pass each other at a quick rate, the wave is not worse than this. When two boats

pass, the horses of one of them stop just before they come opposite the horses of the other boat, and a boatman takes the tow-line off its hook and holds it, in case it should come in contact with the bottom of the other boat, which is passing it at its full speed. As far as I know, no accident has happened since these boats have been put upon the canal, and the trade has increased very much.

When the speed of the boat is low, the waves rise and get a great way ahead of it; if the velocity is increased to a certain extent, the boat keeps up to the wave; and if it sail quicker still, the bow gets before the swell, which decreases in height as the velocity of the boat increases—in the highest velocities, at least, that I have seen the boat brought up to. From this it would appear that the wave has a determinate velocity, like the undulations that cause sound—at any rate, it has a maximum velocity: and if the whole cause of the formation of the wave continues when the boat goes quicker than its motion, the wave will fall behind. Now there is a vacuum formed towards the stern of every vessel when it is sailing; this, together with the height at which the wave stands above the level of the canal, and the motion of the wave in the direction of the boat, will cause it (the wave) to fall in towards the stern of the vessel, and act on its inclined sides, giving back a great part of the power spent in its formation, if the vessel is properly formed. The water sent towards the sides of the canal by the inclination of the bow, will be reflected from the perpendicular facing on the banks, and act in the same way. The lateral communication of motion among particles going in different directions, may have a tendency to keep down the swell. If this explanation is correct, the boats must have their dimensions and form corresponding to the width of the canal, and the velocity they are to sail at.

As the boat rises on the wave, its bow is up or down, according as the wave is fore or aft, I am, Sir, yours, &c.

JAMES WHITELAW.

CANAL TOLLS.—Since the opening of the canals, the amount of tolls paid to the collector at Albany has averaged about fifteen hundred dollars per day, up to and including the 24th instant, and the receipts have been gradually increasing from day to day. On the 25th, the amount received was \$2,300, and probably about the same on Saturday, the 26th. The receipts at this place, thus far, although less than last year, are fully equal to the tolls for the corresponding period in 1832—notwithstanding the diminution of the receipts by a reduction in the rates of toll, since 1832, of about 35 per cent.

During the first week of navigation, there has been received for tolls at Geneva, the sum of \$3,159 44—and at Salina, the sum of \$6,583 70. These are the most conclusive indications that the real elements of our prosperity are unimpaired.

PRODUCE FROM COXSACKIE.—We are fearful we shall not have the pleasure of reporting so favorably of the present season.

Coxsackie Landing is one of the most flourishing villages on the Hudson. In addition to the sloops employed by the enterprising merchants of that place during the past year, 25 in number, two lines of tow-boats, two boats to each line, have been established there, and will be in operation early in the present season. The principal exports from that place are brick, lime, stone, wood, hay, &c. Some idea of its local trade may be formed from the fact that 15,000,000 brick, 17,000 casks lime, 473,430 feet flagging and paving stone, 5,600 tons hay, and 3,750 cords wood, were shipped during the last year.

Stuyvesant is another large and flourishing village, a few miles above Coxsackie, on the opposite side of the Hudson. The Stuyvesant and Coxsackie steamboat United States, with its barges, commenced its regular trips on the 12th inst.

NEW INVENTED STOMACH PUMP—Description of a New Form of the Stomach Pump.
By P. B. GODDARD, M. D., of Philadelphia.
[From the Journal of the Franklin Institute.]

This pump consists of two parts, one of which I shall call the valve box, the other is an ordinary syringe, of good construction, to which the valve box is screwed when in use.

The valve box is a cylinder of metal, containing ovoidal or egg-shaped cavities, equally distant from the centre of the cylinder; at this point a pipe enters, which, when screwed on to the syringe, opens a communication between its cavity and these two cavities in the valve box. Near each end of the cylinder a short and slightly conical tube projects laterally, to which a flexible tube is to be fastened, and which causes a communication between the flexible tube and the cavity in the valve box. Each of these cavities contains a bullet accurately turned, so as to fit the orifices of the tubes, entering into it, and acting as a valve. It will be seen by reference to the accompanying cut (which is a section of the valve box) that if the valve box be held vertically, and the syringe screwed on it, the bullet in the upper cavity will fall upon the orifice of communication between it and the body of the syringe, whilst the bullet in the lower cavity will, in like manner, lie upon the orifice of the tube leading externally. If the lower tube be now immersed in water, and the piston of the syringe be drawn out, it will be evident that the body of the syringe will be filled with water from the lower tube. If now the piston be pressed home, the water will pass out of the upper tube; the bullet in the lower cavity preventing its escape there, just as the bullet in the upper one prevented the entrance of air before. It will then always pump water, or any other fluid, from the lower tube to the upper.

If the position of the valve box be now reversed, and the end which was above be placed below, the bullets will fall by their own gravity into the opposite ends of the cavities, and the instrument will act as it did before, viz. pumping from the lower orifice to the upper, although the relative position of the tubes has been reversed.

To use this instrument, the valve box must be held in nearly a vertical direction. A long flexible tube being passed into the stomach, is attached to one of the short conical tubes, say the upper, and a short tube leading to a basin is then fastened to the lower one. The basin being filled with warm water, and the syringe put in action, the water will pass into the stomach and dilute the poison. When enough has passed in, the syringe is to be turned in the hand, so as to bring the tube down which was before above, without taking off the flexible tubes, or changing them in any way, and the syringe again put into action. The water will be pumped out of the stomach, bringing the poison along with it.

The following are the chief advantages of this instrument. It is perfectly simple in its construction, and not liable to get out of order.

The directions for its use are easily understood, and as easily remembered.

After the flexible tubes are once adjusted, no alteration is required until the operation is finished.

When the instrument is once put in action,

gallons of water may in a few minutes be passed through the stomach, thus washing away every trace of poison and saving many a valuable life.

Fig. 1, section of valve box—*a a*, cavities for the bullets—*b b*, bullet valves—*c c*, tubes, to which are attached the flexible pipes—*d*, female screw to attach it to the syringe

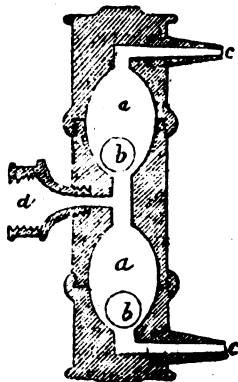
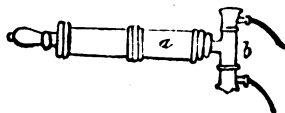


Fig. 2, the entire instrument—*a*, the syringe—*b*, the valve box.



Ericsson's Caloric Engine. By G. K. O.
To the Editor of the Mechanics' Magazine.

SIR,—After reading several times the description of Ericsson's Caloric Engine, contained in your February number, I am yet at a loss in regard to some things. Assuming, as the description does, that the air in the part of the engine represented black is under greater pressure than that in the white, but being of nearly the same temperature, it must be of greater density; for example, let the density of one be represented by 50, and that of the other by 100, that is, the quantity of air contained in any given portion of the black is twice that contained in a corresponding portion of the white part: suppose the temperature in the large cylinder is 480 degrees higher than that in the small one. Now, if 10 cubic feet of air of the density of 100 be admitted into that of 50, it will expand till it becomes of the same density as that into which it is admitted, and occupy nearly 20 cubic feet; and when reduced 480 degrees in temperature, will yet occupy 10 feet. While the large cylinder admits 10 feet of the density of 100, the small one takes out 5 feet of the density of 50, which, though expanded by the heat, would only fill 10 feet of the density of 50; but being admitted into the black part, where the pressure and density is 100, it will become of the same density, and, of course, occupy but 5 feet. If the case be as I have stated, the corresponding portions of the two bodies of air in the black and white parts will soon be brought to the same density by a few strokes of the engine, and (according to the description) the difference of density constitutes the motive power. Will you, or some of your correspondents, please explain this difficulty. Yours, &c. G. K. O.

DR. MAJENDIE'S OBSERVATIONS RESPECTING THE PULSE.—Majendie has given a scale of the pulse, which shows that the difference in

frequency between that of the infant and the aged is more than double. The scale is, at birth, 130 to 140 a minute; at one year, 120 to 130; at two years, 102 to 110; three years, 90 to 100; seven years, 85 to 90; fourteen years, 80 to 85; adult age, 75 to 80; first old age, 65 to 75; confirmed old age, 60 to 65.

THE NUMBER FIVE.—The Chinese have a great regard for this number. According to them there are five elements—water, fire, metals, wood, earth; five perpetual virtues—goodness, justice, honesty, science, and truth; five tastes—sourness, sweetness, bitterness, acidity, and salt; five colors—azure, yellow, flesh-color, white, and black; they say there are five viscera—the liver, the heart, the lungs, the kidneys, and the stomach. They count five organs of the senses—ears, eyes, mouth, nose, and eyebrows. A Chinese author has written a curious dialogue between these senses. The mouth complains that the nose is not only too near, but above her; the nose in reply defends its position, by stating that but for it the mouth would eat stinking meats. The nose in turn complains of being below the eyes; they reply that but for them men would often break their noses.—[Le Lanterne Magique.]

CURIOUS ASTRONOMICAL THEORY.—We state the following on the authority of M. Arago, an eminent French astronomer: If we place in a horizontal line the series of figures of which the law is evident—

0 3 6 12 24 48 96 192

(each double the precedings,) and afterwards add 4 to each, we shall have a series denoting the relative distances of the Planets from the Sun, thus—

4 7 10 16 28 52 100 196

Mercury. Venus. Earth. Mars. * Jupiter Saturn. Uranus.

If 10 represents the distance of the Earth, 4 will be that of Mercury, 7 Venus, 16 Mars, and 52, 100, and 196, the respective distances of Jupiter, Saturn, and Uranus. This law was known as far as 100, before the discovery of Uranus: and the distance being found to correspond, affords a very remarkable confirmation of its truth. But it will be observed there is a deficiency of one term between Mars and Jupiter. This led philosophers to suspect the existence of a planet at the distance required to fill up the vacancy; and in 1801, Piazzi, of Palermo, actually discovered one, whose orbit was between those of Mars and Jupiter, and nearly at the proportional distance of 28 from the Sun. This planet was named Ceres; and since that period three others have been found—Pallas, Juno, and Vesta—all of which have their orbits so near each other as to lead astronomers to believe that these are the fragments of a larger planet, which had been shattered into pieces by some internal explosion, or the shock of a comet.—[London paper.]

FAMILY ALBUM.—We were not long since informed of a practice observed in the family of an excellent widowed lady of this city, which must be of great utility to her children, and which we venture to recommend to the readers of our paper. A folio, if we mistake not, is provided as a place of deposit, into which each member of the family is required to put once a week a piece of written composition, upon any subject that may suggest itself to the mind of the writer. Saturday evening the budget is opened and each piece read, criticised, and amended, in the presence of the family. It is impossible to calculate the advantage to be derived from such a practice, by establishing in early life habits of investigation, and mental improvement. The mother who thus educates her children, may sanguinely anticipate a maturity of usefulness and respectability. Dreading profligacy and low vice can have little to tempt a mind thus early shrouded by lessons of purity, domestic happiness, and pleasant fire side instruction. Give your children an early love for books, refine their taste by

works of art, set them an example of religious excellence, of correct manners, and endeavor to make the domestic hearth always attractive, and you bar up all the great avenues to immortality.—[Portland Courier.]

INGENUOUS CONTRIVANCE.—I wish, through the medium of the Centinel and Palladium, to notice a neat and economical improvement made by Mr. Currier, of this city, respecting bells for houses and hotels. Heretofore there have been separate bells for each apartment. These have been numbered to indicate the apartment where an attendant was wanted. In large establishments numerous bells are necessary, and these are costly, and sometimes not useful if the bell had ceased to sound before it was looked at. In the invention a single bell is sufficient for the largest hotel. The wire from each apartment, while it rings this common bell, communicates motion to a suspended ball over an appropriate number, and its long continued vibrations give, without fail, and without noise, the information that is desired. The expense is comparatively trifling.—[Boston Centinel.]

AGRICULTURE, &c.

SECURING A CROP OF FRUIT ON PEAR TREES.—Take a pair of scissors (such as are used in thinning grapes), and go over the corymbs of flowers, or rather of flower-buds, as soon as they are sufficiently elongated to allow the points of the scissors to pass between them (that is, some days before the blossoms are expanded), and thin them; leaving only five

or six blossoms in each, according to the size of the corymb; always preferring to leave the flowers which have the stoutest stalks, and those which are nearest the centre. This operation has the effect of diverting the sap to the flowers which remain, and gives them sufficient strength to set from one to three fruits in each umbel; which will prove a sufficient crop, and well repay the labor bestowed. Another mode, less tedious than the above, is also practised here, with success, on young trees. It consists in deferring that part of the pruning of them which is termed shortening the young wood, until the blossoms are in about the same state as is described in the above directions for thinning, and then shortening them back to the required length. This also checks the progress of the sap, and enables the tree to set fruit very freely. I am aware that my plan is a tedious one, and one that is almost impracticable on a large scale; but it is decidedly an excellent plan for dwarf trees in gardens, whether they are cultivated in the *quenouille* mode, against walls, or as espaliers; as these trees come within the reach of the hand, of a pair of steps, or of a ladder. In the hope that these remarks may, through your indulgence, avail my fellow-laborers in horticulture, at the coming season, I am, sir, yours, &c.

BERNARD SAUNDERS.

Nursery, Island of Jersey, Dec. 6, 1833.

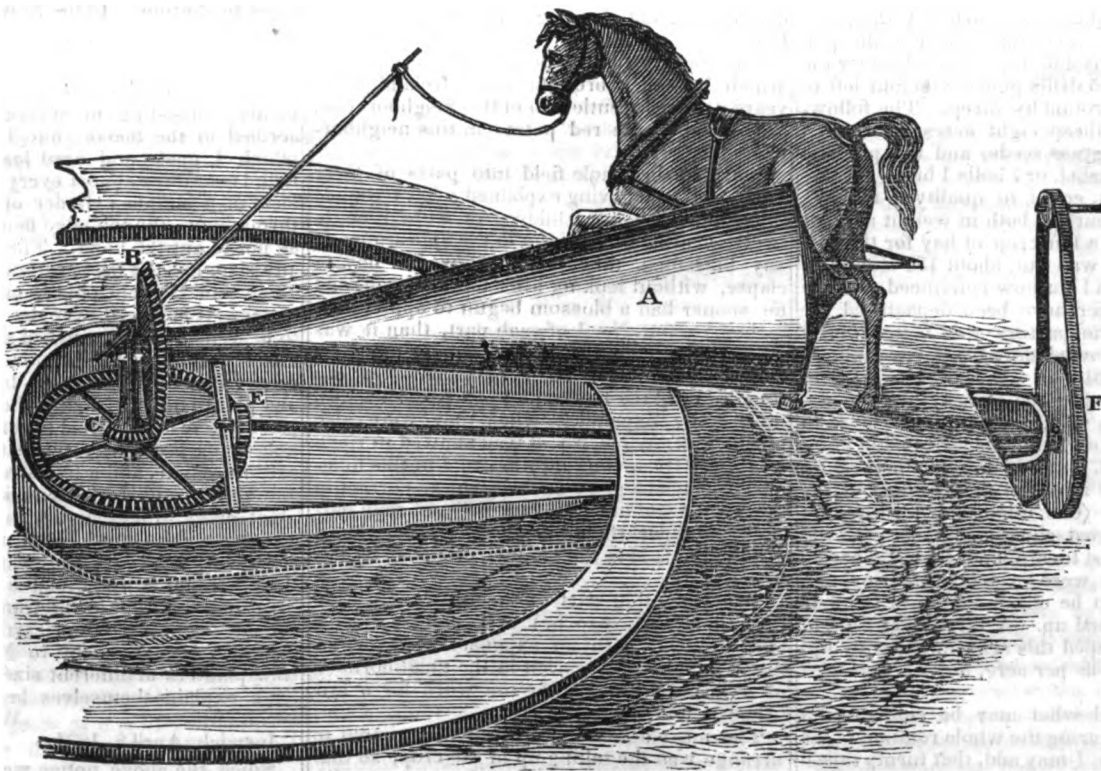
We recommend the above article to the particular attention of young gardeners. The system of disbudding advised in the preceding paper by Mr. Callow, and that of thinning out blossoms suggested in the above paper by Mr. Saunders, are applicable to all fruit trees, and,

if generally adopted, would insure important results. We know an instance of a large apple orchard, the property of a commercial gardener in Kent, in which a knife has never been used: every thing is effected by disbudding, and pinching out young wood with the finger and thumb. The proprietor is not a scientific gardener; and he adopted the above practice from no particular theory, but simply from his own observation and experience, to save labor, and to insure good crops of large fruit. We hope to see his orchard next summer, and to report on it.—[Loudon's Mag.]

UVEDALE'S ST. GERMAIN PEAR.—A fine specimen of this pear has been sent us by Dr. Hamilton of Plymouth: its dimensions are, "13½ inches for the transverse, and 16½ inches for the longitudinal diameter; and its weight is 1 lb. 11½ oz. The tree from which these pears were gathered has, in former years, produced fruit of a considerably larger size, and in much greater abundance, than in the present season, and five years since a pear was gathered from it which weighed above 2½ lbs. —William Hamilton. 15 Oxford Place, Plymouth, Nov. 14, 1833."

CARROTS FOR LIVE STOCK.—The Altrincham carrot, grown in rows 18 inches apart, and the carrots at the same distance from each other in the rows, the roots attaining the thickness of a man's thigh, and the length of three feet, with a vigorously growing top, for feeding cows or other cattle.—[Loudon's Magazine.]

[The seeds of these carrots are for sale by H. Huxley & Co., 81 Barclay street.]



Description and Drawing of Beecher's Portable Horse Power. By the INVENTOR. [For the New-York Farmer and American Gardener's Magazine.]

This power is applicable to all purposes where speed is necessary, particularly to thrashing, grinding, turning, and sawing. Its superiority consists in the simplicity of the gear, only two wheels of 23 and 30 inches, with pinions of 9 and 6 inches, are necessary to get a speed of two to three hundred re-

volutions per minute. The power being obtained by a revolving lever on a smooth surface, it is not liable to break by sudden impetus, or stoppage. It requires no frame or building, but is simply fastened to the ground or floor. The lever may be increased in length without diminishing the speed. It may be removed and erected in three hours' time. It can be placed in a back yard or cellar, and it makes no jarring in the building. REFERENCES.—A, revolving lever; B,

driving wheel; C, nine-inch pinions; E, line shaft; and F, band wheel.

This horse power may be seen in the yard of the Railroad House, 98 Barclay street, New-York. The right to territory may be obtained of the inventor at the above place. Machines of one, two, three, or four horse power furnished to order at 60, 75, 90, and 100 dollars.

A portable cider mill and press to be seen as above.

[To the author of the following Report, the result of five years' practical experience, the thanks of the Society and the honorary Silver Medal were voted by the Directors.]

Report on the Value of Bone-Manure, in comparison with ordinary Farm-Yard Manure.

By the Honorable Captain W. OATLEY, Airlie Castle.

Mr. Watson, of Keilor, introduced the use of bone manure into Strathmore, having seen it used in England. I am not certain in what year he began to make experiments with it, or to employ it extensively, but I remember well that the great deficiency of farm-yard dung in 1827 (consequent on the almost total failure of the crop of the previous year) first induced me to try 4 acres of turnip without other manure, sown with 15 bushels of bone-dust per acre, which I obtained from Mr. Watson: it cost 3s. per bushel, or £2 5s. per acre. The crop of turnip on these four acres was at least equal to the rest raised with farm-yard manure; but as the whole of the turnips were pulled, and the land received some dung before the succeeding crop, much stress cannot be laid on the circumstance of the following white crop and grass being good.

Next year, 1828, encouraged by the former successful experiment, eight acres were sown with turnip, solely with bone-dust; the soil a light sandy loam; the subsoil gravel and sand, coming in some places nearly to the surface, which is very irregular, but in general has a south exposure. This field had been broken up with a crop of oats in 1827, after having been depastured six years, principally by sheep. The quantity of bone-dust given was 20 bushels per acre, and cost 2s. 6d. per bushel, or £2 10s. per acre. The turnip-crop was so heavy, that, notwithstanding the very light nature of the soil, it was judged advisable to pull one-third for the feeding cattle, two drills pulled, and four left to be eaten on the ground by sheep. The following year, 1829, these eight acres were sown with barley and grass-seeds, and the produce was 57 bolls 1 bushel, or 7 bolls 1 bushel nearly per acre, of grain, equal in quality to the best in the Dundee market, both in weight and color. Next year, a fair crop of hay for that description of land was cut, about 150 stones an acre; and though I am now convinced that the field should rather have been depastured the first year, yet the pasture was better than it had ever been known before for the two following seasons, 1831 and 1832. It is worthy of remark, as a proof of the efficacy of the bone-manure, that in a small angle of this field, in which I had permitted a cottager to plant potatoes, well dunged, and which, after their removal, was included in one of the flakings of the sheep, and had (one might have supposed) thereby had at least equal advantage with the adjacent bone-dust turnip-land, both the barley and grass crops were evidently inferior, and this continued to be observable until the field was again ploughed up. A very bulky crop of oats has been reaped this season, probably upwards of eight bolls per acre, but no part of it is yet thrashed.

Having detailed what may be considered a fair experiment during the whole rotation of the above eight acres, I may add, that turnip raised with bone manure, and fed off with sheep, has now become a regular part of the system on this farm; 15, 20, and, last year, 25 acres were fed off, and invariably with the same favorable results, with the prospect of being able to adopt a five-shift rotation, and to continue it without injury to the land. Every person in the least acquainted with the management of a farm, of which a considerable proportion consists of light, dry, sandy loam, at a distance from town-manure, must be aware of the importance of this, from knowing the expense at which such land was formerly kept in a fair state of cultivation; indeed, the prices of corn for some years past would not warrant the necessary outlay, and large tracts of land, capable of producing barley little inferior to that of Norfolk,

must speedily have been converted into sheep pasture, but for the introduction of bone-manure.

Note.—For the last four years, 25 bushels of bone-dust have been given to the acre; the price this year was 3s. per bushel, or £2 15s. per acre.

[The honorary Silver Medal having been offered as a premium for the best account of experiments made, to ascertain what advantage may be derived from plucking off the flowers of the Potato, it was adjudged to the author of the following Report.]

Report of an Experiment, made at Aberdona, to ascertain the Benefit resulting from the Removal of Potato-Blossoms. BY JAMES MURRAY.

The experiment was made according to the plan laid down by the Highland Society in their list of premiums for 1833.

The quality of the soil was not the best adapted for a very successful potato crop, but as I did not think of making the experiment until after the ground had been sown, I had no alternative left me. At the same time, I believe that an experiment of this nature, although made upon a crop raised in soil not peculiarly well adapted for its culture, will be quite as satisfactory in determining the advantages or disadvantages of it, as one made upon a more congenial soil. The soil consisted throughout the two acres upon which the potatoes had been sown, of a shallow loam, upon a bed of what is generally called till. The field had been well drained, but like every other field of the same nature of soil, (unless where Mr. Smith of Deanston's trenching plough may have been used,) continues in what may be called a cold, damp state, and therefore an enemy to the potato.

The variety of the potato sown was one which had been brought from Ireland some years ago by a gentleman of this neighborhood, and is called the red potato in this neighborhood.

I divided the whole field into parts of three drills each, and having explained what I wished to be done to a few children of from nine to twelve years old, previous to the appearance of any blossoms, they never allowed a day to elapse, without looking after their charge, and no sooner had a blossom begun to appear, (or in bud,) upon No. 1 of each part, than it was certain to be immediately plucked off. The other two drills of each part remained untouched until the blossoms upon No. 2 seemed to be fully expanded, when they were also plucked off, while No. 3 was allowed to ripen its fruit. By arranging the drills in this manner, I could depend on being more correct in having the soil of each of the drills of each part exactly similar than I could have been, had I divided the field in the manner proposed by the Society.

The preceding part of the experiment was (as it must appear to be) very simple indeed, and attended with no expense whatever, for there are always children in the neighborhood of a farm, who will do the work for a few pence a-day.

The most difficult part of the experiment to arrange was the taking up of the crop, so that there might be no interference between the different drills. To obtain this, I took three carts, one of which was appropriated entirely by No. 1 of each part, another by No. 2, and the remaining one by No. 3. In this manner I prevented the very slightest mingling of the potatoes.

The quantity of potatoes which each cart held, was exactly ascertained, and the management of this part of the experiment being given to one person, it was his business to mark down how many loads each cart took to the potato-pit.

After the whole crop had been taken off the field, and the overseer's note-book examined, the following was the result:

Drills, No. 1, being those from which the

blossoms were plucked in the bud, contained 30 bolls 2 bushels.

Drills, No. 2, being those from which the blossoms were plucked when in full flower, contained 27 bolls 3 bushels.

Drills, No. 3, being those upon which the fruit was allowed to ripen, contained 26 bolls.

The superiority, therefore, of No. 1 over No. 2, was 2 bolls 5 bushels; over No. 3, was 4 bolls 3 bushels; and of No. 2 over No. 3, was 1 boll 2 bushels.

From the above experiment it would appear, that the potato crop had been improved by having the blossoms plucked off, and that according to the period at which it had been done. At the same time, the difference is perhaps not much more than would be counter-balanced by the additional trouble given in taking up the crops; for, although regulated as well as possibly could be done, still it could not be taken up in nearly the time in which it would have been done, had the drills been resorted to indiscriminately.

The quality of the potato is remarkably good, it is of a mealy nature, and an uncommonly good keeper. We were using them last year here, in preference to early potatoes. Aberdona, Alloa, November, 1833.—[Transactions of the Highland Society of Scotland.]

TRANSPLANTING IMPLEMENTS.—Many farmers and gardeners prefer transplanting some field and garden crops, for various reasons, particularly on account of the greater certainty and yield of the crops. Turnips, which are so liable to be cut off by insects, and by turkeys, are, by transplanting, rendered as certain as most other field crops. In the New-England Farmer we find the subjoined notice of simple implements:

Several complicated transplanting instruments, consisting of several pieces, are described in the books, but I believe that one which I made and used last summer will be found to answer almost every purpose. It consists of a simple cylinder of tin plate, equal throughout, the top edge being turned over so as not to cut the hand. They may be made of any size, but the best for ordinary purposes are about 8 or 10 inches high, and 4 or 5 in diameter. It is placed over the young plant about to be removed, and pushed down a few inches into the soil, nearly or quite to the bottom of the roots; it is then taken up, bringing the earth and plant with it. Being then carried to the place where it is wished to set the plant, and the hole being previously made to receive it, it is set in the hole, and a few strokes from the digger on the outside loosens it, and leaves the plant erect in its place, with all the earth in a circular mass about it, when the transplanter is removed. The ease and neatness with which the operation is performed is very striking. A plant may be kept in the transplanter for several days uninjured, and carried to almost any distance. I have sent to Mr. Barrett three transplanters of different sizes, which will perhaps explain themselves better than my description. WILLIAM OAKES.

Ipswich, April 8, 1834.

Since the above notice we have been introduced to another implement for the same purpose, invented by a Mr. Smith, and which is for sale at the Boston Agricultural Warehouse. This machine is so fitted with a moveable slanting side, that the communication between the plant and the earth in which it grew, except a portion of soil attached to the roots, is cut off at the bottom as well as the sides, by which means, on withdrawing the implement, the extraction of the plant, and a quantity of attached soil in which it grew, is rendered certain.

Locusts.—According to the prevailing notion, these insects are to return this season, being the 17th year since their former appearance.

Manufacture of Silk—Gay and Bottum's Silk Apparatus. By the Editor.

Among the pleasing objects to be seen in the picture of our country, which is to be drawn some ten or fifteen years hence, will be the creeping and voracious silk worm,—pleasing, because the emblem of so much prosperity, and the source of so much earthly happiness. It will, in the language of the eye, say that the stony fields and the river bottoms of industrious New-England are inclosed by the bright-leaved mulberry—that the blooming fair in the land of steady habits are plucking the leafy food, feeding myriads of nature's humble and hungry offspring, and unwinding the glossy fibre that is to clothe and bring food to thousands and thousands of worthy families—that emulous New-York and Pennsylvania, and the youthful and vigorous West, are adding the important labors of the silk-worm to their already numerous and augmented resources,—and that the generous and high-minded South, seeing that industry and enterprise avail more than murmurings in averting the evils of the tariff, are introducing this and other abundant sources of wealth, for which their climate, soil, and internal resources afford many facilities.

From all we have seen and learned, we cannot resist the conclusion that this country will rapidly progress in the manufacture of silk until its own wants are supplied, and perhaps until it finds itself in a condition to compete with other countries to supply the markets of the world. In the northern, middle, western, and southern States, extensive preparations are being made, not only for the growth of the mulberry, but for manufacturing the silk, particularly in some of the New-England States. Of this progress our future pages will give an account.

Messrs. Gay & Bottum, of Lisbon, Ct., recently exhibited in this city their apparatus for the manufacture of this article. It was kept in active operation, and consisted of a reel for winding the silk from the cocoon, a winding frame for winding it from the hanks on to spools, or bobbins, a twisting or throwsting machine for doubling and twisting it on to other bobbins, and two looms for weaving. The whole apparatus would occupy a space of twenty feet square, and was made principally of iron, and in the most durable and finished manner. We took down a few notes, which we lay before our readers in the order they were taken.

The reel, which is on the principle of that of G. B. Smith, of Baltimore, consists of a wooden frame, and wheels of polished iron and brass. It is a very compact and simple machine, doing the work in the most perfect manner. The price of it is fifty dollars; and Mr. Gay thinks the part on which the silk is wound should be made of metal, to preserve the fibres or threads of the same tension until they become dry. This makes the thread smooth, and less liable to be fritted in the wear. If made of wood, he says the moisture of the silk will cause that part in contact with it to swell and shrink, and thus injure the thread. We should suppose, however, that glass, or thin pieces of metal fastened on the wood, would answer every purpose, and enable him to manufacture them at near one third the price.

On the supposition that the apparatus is moved with water or horse power, for which it is designed, one female will reel one pound

of raw silk for weaving, and one and a half or two pounds for sewing. For a hand reel, two females are required to do this quantity. One bushel of cocoons will make one and a quarter pounds of merchantable raw silk, and two ounces of floss silk.

The diameter of the winding part of Mr. Gay's reel is not sufficiently large. The larger it is the faster can the silk be reeled. One of these reels will reel for a whole neighborhood, and enable silk growers to produce raw silk that will command from \$4 to \$5.50 per pound.

The silk is taken from the reel and put on the winding frame, which winds, twists, and, if necessary, doubles the thread at the same operation. One female, on the above supposition that the apparatus is moved by other power, will wind and double two pounds from thirty bobbins in a day. This is for warp—a greater quantity for filling.

The spools are taken from the winding frame and put on the twisting or throwsting machine. One female will attend 30 to 50 spindles, producing about one and a half pounds of weaving silk, and two for sewing. After this operation the silk is cleaned by boiling in soap suds about two hours—20 lbs. of soap to 100 lbs. of silk. It is new colored, which is done in New-England principally with vegetable substances, almost entirely of the growth of this country. The silk is superior to that of foreign countries, in the durability of both color and wear. An elderly lady of Lisbon, Ct. has a piece of American silk of lead color, which has been lying about the house for more than twenty years; it is still unfaded and unchanged.

The next operation is weaving on a hand loom. A weaver, often a female, will produce per day five to six yards of thick vesting, or gros de Naples. Of thinner silks, six to ten yards can be woven. The specimens that we saw were very thick and strong, and were worth three dollars per yard.

Although silk has been manufactured in this country for more than fifty years, yet Mr. Bottum, who has given his attention to it for thirty years, informs us that there are not cocoons raised in the country sufficient to keep three hand looms in operation. If more cocoons were raised, there would be a better market, although they now command from three to three and a half dollars per bushel, of good quality. A farmer can raise one bushel for two dollars, if he hires all the labor. An orchard will let out for half or more of the cocoons produced. A gentleman in Hartford lets out his orchard for two thirds. One acre of the white mulberry will produce forty pounds of raw silk. Dr. Henry Holmes, of Hartford, says from fifty to a hundred pounds. Mr. Butler, of New-York, calculates the new Chinese mulberry, *Morus multicaulis*, will produce one hundred pounds. Mr. B. has 100,000 of these plants.

When the cocoons are first finished by the worms, they are put in shallow baskets, covered with paper, and dried in an oven moderately heated. When taken from the oven the baskets should remain covered until the cocoons become cool, and then they are spread to dry. If they are not immediately spun, they should be put in cotton bags, with a little tobacco sprinkled among them to keep out moths.

Cocoons before they are wound should be sorted into three qualities: poor, or first sort, for sewing silk, will command \$4 per

pound; next, of fair quality, worth \$4.50; best, worth \$5 to \$5.50, when wound.

American raw silk thus prepared is superior to that of foreign countries, and will command a better price. Mr. Bottum has for two years past bought all American raw silk he could obtain. But on account of the scarcity of the article, he has been obliged to depend principally on imported silk to keep his weaving in operation. He depends on the females of our own country for all the operations except that of weaving; and for this cotton weavers will supply every demand. Much loss and much discouragement have been met with, by depending on foreigners. Mr. B. has used raw silk from Bengal, Canton, and Italy, and he prefers American silk, at 10 per cent higher price. It is brighter, softer, and stronger, by 25 per cent. The Italian is next best for softness.

The whole apparatus exhibited by Messrs. Gay & Bottum is principally made of iron, finished in a superior style, and cost about \$1000. The greater part of it would last for a century. They will exhibit it in New-Haven, on the 15th of May, before the members of the Legislature of Connecticut. They intend also to exhibit it at the Fair of the American Institute in this city, in October next. As soon as it can conveniently be made, a reel will be exhibited at the Agricultural Warehouse, 81 Barclay street. The improvements in the machinery are the result of eighteen years of experiment and experience. Independent of the weaving part, or looms, two hands are required for the moving power. Horse or other power will be requisite in producing work in factories.

STRAWBERRIES IN FLORIDA.—Strawberries were in the market at Tallahassee, Florida, in the month of March. New potatoes had also made their appearance.

THE FRENCH TREATY.—Some grave questions seem likely to arise from the rejection by the French Chamber of Deputies, of the appropriation to carry into effect their treaty of indemnity with us. Under it, French wines have been admitted for more than two years, we believe, into our ports at a reduced duty. Some duties, overcharged, have been refunded, and the whole course of this country has been shaped on the presumption that the treaty was valid, and of mutual obligation. The perfect good faith, therefore, with which we have acted in the matter, may be advantageously contrasted with—to say the least of it—the carelessness and indifference of the French Government, as instanced by suffering, in the first place, the bill drawn by the Treasury of the United States for the first instalment, to be protested—then by omitting to submit the treaty to the Chambers till a period so late, in the session previous to this, that no action could be had on it—and finally by failing, on the present occasion, to support this measure of obvious justice, and now of admitted obligation, with the same strength, which a few days before in carrying an odious law—that for suppressing associations—the Ministers exhibited. That law, in a house of 460, was carried by a ministerial vote of 246 to 154—whereas the ministerial vote for the treaty was only 168, a defection of seventy-eight members! The rejecting, or anti-ministerial vote, was 176. The whole number composing the Chamber of Deputies is 460, and yet on a question involving the mutual harmony and good understanding of two nations, 344 members only attended. This is a matter, which, under the circumstances, it will be difficult for the French ministry to explain satisfactorily.

THE

NEW-YORK AMERICAN.

MAY 2—MAY 10, 1834.

LITERARY NOTICES.

No. XXII.

Prairie du Chien, Upper Mississippi, Feb.

I had only been in Galena a few hours, when I learnt that a mail carrier was to start in the morning for Fort Crawford on the Upper Mississippi, and determined at once to accompany him, deferring an examination of the country around Galena till my return. It was about eleven o'clock of a fine, clear cold day, when my *compagnon de voyage*, a bluff-faced, curly-pated fellow in a green blanket coat, drove up to the door in a better sleigh than I had seen on any of the stage routes below, and wrapping myself up in a couple of buffalo robes and sundry blankets, I found myself, after ascending the rugged bluffs of Fever river, armed at all points to encounter the biting wind which swept the open plain beyond. And here I may remark, that although the cold winds in this prairie country have a power that I had no idea of till I experienced it, yet the people dress so much more rationally than they do at the North on the seaboard, that health and even comfort are but little invaded. I remember when first overtaken by the cold weather on the prairies, I was travelling with a simple furred wrapper as an overcoat and a pair of carpet socks over my boots; the last of which, from their clumsy and effeminate appearance, I long neglected to put on. But on arriving one night at a lonely shantee, I found an old Indian trader just disencumbering himself of his travelling gear, and the lesson has not been readily forgotten. His disrobing reminded me of the grave-digger in Hamlet with his sixteen jackets, (a stale joke by the by, which is now rarely practised upon the stage)—and a man at arms of the fifteenth century, with his armour of plate and triple coat of twisted mail, was not cased in better proof than was my Indian trader. Among the articles of dress that I recollect were a blanket coat over an ordinary surcoat, a plaid cloak upon that, and a buffalo robe trumping the whole; while three pair of woolen socks, buckskin moccasins, and long boots of buffalo skin with the fur inside, assisted his leggings of green baize in keeping his extremities warm; and a huge hood and visor of fur set Jack Frost at defiance, should he assail from above. I do not by any means mention all these defences as constituting the ordinary apparel of the country; for every one on the frontiers dresses just as he pleases, and whether he has his blankets and skins made up into coats and boots, or wears them loose about his person, no one comments upon it. The utmost freedom of dress prevails, and you may see the same person three days in succession with a leather hunting shirt, a surcoat of scarlet woolen, or a coat of superfine broadcloth, just from New York, all worn in any company, with the same air of independence; and, while several colors and textures frequently combine in the same dress, the result is of course an outrageous violation of taste in individual instances, but great picturesqueness of costume upon the whole. The very figure whose apparel is most obnoxious to the laws of good taste as last enacted by fashion, being often that, which, of all others, a painter would introduce into a landscape to relieve its colors, or copy for some romantic charm of its own.

The country through which we now rode, though only interspersed here and there with woodland, presented a very different appearance from the open prairie below. In the vicinity of Galena it was much broken by rocky ravines and deep gullies— which in the spring of the year must afford a ready passage for the water created by the melting of large bodies of snow—and far away toward the Mississippi the inequalities of the surface showed like a distant range of mountains, that on nearer approach resolved themselves into three or four distinct hills, which again on reaching their banks, proved to be only rocky mounds, of not more than 150 or 200 feet elevation—standing isolated on the vast plain like excrescences, thrown up by some eruption from its surface. Beyond these again, the country became beautifully undulating, and when the warm light of sun-set glanced along the tall yellow grass which raised its tapering spears above the snowy surface, and the purple light of evening deepened in the scattered groves that rested on its bosom—it required no exercise of fancy to conceive that these were sloping lands, and smooth meadows, and open parks, which the gathering shades of night were stealing from the eye. But at last, just where the landscape was becoming almost too broken to keep up these associations

of high cultivation, a distant light appeared glimmering at the bottom of a rocky valley, and slipping and floundering through the snow which partially smoothed the rugged descent, we entered a small hamlet of log huts, and drove up to the door of a frame building, which proved to be the public house of "Mineral Point."

A portly Tennessean of some six feet received us warmly at the door, and hurried me into a room where a large fire of bur oak, and a smoking supper of venison and hot corn cakes were alike welcomed. Half a dozen miners in leather shirts and belted coats of Kentucky jean were lounging about the establishment, while a tall backwoodsman in a fringed hunting frock, was stretched on several chairs, with a pipe in one hand, and the other resting on a Pelham savel, which, with a volume of Shakespeare, an old bible, and the "Western Songster," formed a pyramid beneath his brawny arm. "Whirling Thunder," the Winnebago Chief, had, as I was informed, just left the establishment, or our party would have been perfect. The old fellow, who, I presume, is superannuated, had been breathing revenge and slaughter against the Sacs and Foxes, who, he says, have killed a number of his tribe, and he avows a determination to come down upon the enemy with 700 warriors, though I believe it is well known that there are not at present 500 in his tribe, and they scattered far and wide on their hunting expeditions. As it was however, I found the company into which I was thrown, in more than one way agreeable. They were civil and intelligent; and when a segar was handed me by a well dressed gentleman engaged in the mines, who had set down to supper with us, I stretched my legs before the fire, and soon felt myself perfectly at home. The rumors of Indian wars, with the incidents in those already gone by being thoroughly discussed, feats of strength and activity were next introduced; whereat, a burly broad-shouldered fellow, with a head of hair like a boat's swab, jumped to his feet, and shaking the flaps of his rough kersey doublet like a pair of wings, he crowed and swore he could throw any man of his weight in the mines. "Why, Bill Armstrong," cried a little old man, who I was assured was 78 years of age, shaking the ashes from his pipe the while, "I could double up two such fellows as you in my time, and I think as it is (slowly rising and collarng the puissant Bill) I'll whip one of them now for a treat." They grappled at once, and Armstrong good naturedly allowing the old man to put him down, a laugh was raised at his expense. But Bill was too much a cock of the walk to mind it, and striding up to the bar, he called out, "Come here old fellow and take your treat—you're a steamboat—but who couldn't be beat by a fellow that had forty years the advantage of him."

The next day's sun found us, when a few hours high, in a country which, though not a house was to be seen for miles, I can only compare, with its intermingling of prairies and groves, rocky ravines and rapid brooks of sparkling water, to the appearance which the interior of the country along the Hudson would present, if the fences and farm houses were taken away. Its varied aspect was far more pleasing to my eye than the immense plains of table land below, where the sound of a waterfall is never to be heard, and a stone larger than a pebble is, (unless on the banks of the Illinois,) rarely met with. The soil, indeed, is not so rich, but the country is unquestionably more healthy; and though the climate is actually more severe in winter, yet the wind is so much broken by the numerous groves, and the general inequalities of the surface that one suffers much less from cold. A great error is committed by Government in keeping the land out of market, for the patches of woodland, though frequent, are not so dense as those below, and the number of smelting furnaces of lead ore, which are scattered over the whole country between Rock river and the Wisconsin, tends to diminish them so rapidly, that in a dozen years hence, wood enough will hardly be left for the ordinary purposes of the farmer. Whatever measures are adopted, however—and I believe there is a bill in relation to these lands, now pending in Congress—the pre-emption rights of the first settlers should be secured in the most liberal manner. Their sufferings from three Indian wars, and their endurance of every risk and privation, are almost incredible; and considering that it will take them some years now, to recover from the last affair of Black Hawk, I would have government give them several years credit; but the early sale of the lands, I believe to be indispensable to the future welfare of one of the finest regions in the world. The truth is, that no smelting should be done in the interior, but the mineral should be transported to points

where fuel is more abundant, and the timber now growing upon the spot left for the use of the farmers and the miners, to whom it is indispensable for the prosecution of their labors. Such will hardly be the case until a property in lands is established, and individuals be no longer permitted to sweep grove after grove from the soil, till the country begins to assimilate in some places to those leafless tracks in Illinois, which will probably remain unsettled prairie for a century to come.

I was particularly struck with the bold life which these miners have long led, the chief dangers of which, it is presumed, are now over—by observing a strong block house erected among a cluster of small shantees where two brothers lived with whom we stopped to take some refreshment at noon. They were miners and farmers together; and carrying on their business remote from any other house or settlement, they probably sent the mineral and vegetable productions of their favored soil to market at Galena in the same car. They had struck the vein of ore which they were working in badger hunting—the habits of that animal being of great assistance to the miner in exploring for mineral. I saw at the same place a fine dog terribly gored by a wild bear—the descendant of the domestic hog, which runs wild in this region, and sometimes makes a good hunt.

Our rout hither, which was by no means direct, carried us through a broken savage country, where a thousand clear streams seemed to have their birth among the rocks—singing away—though the earth was wrapped

"In safe-consuming winter's drizzled snow."

as if the leaves of June quivered over their chrysal currents. At one time these crisped fountains were the only objects that gave life to a burned forest through which we rode, where the tall branchless and charred trees stood motionless on the steep hill-side, or lay in wild disorder, as they had tumbled from the rocky heights, into a ravine below. Emerging from this desolate region, where the tracks of bears and other wild animals were to be seen on every side, we launched out on one of the loveliest prairies I ever beheld. It was about a mile wide, and not more than four or five in length, and smooth as a billiard table, with two small islets of wood in the centre. Our horses, which had seemed almost fagged out while slipping and stumbling among the rocks and fallen trees, in the timbered land—now pricked up their ears and snorted with animation, as they made our light sleigh skim over the smooth plain.

It was afternoon on the third day after leaving Galena, that on descending a steep bluff of about 150 feet, we came to a small tributary of the Wisconsin, winding through a narrow valley below. Following down the slender rill, whose banks exhibited no shrubbery, save a few dwarf willows, we crossed a wooded bottom, where the long grass among the trees shot above the snow to the height of our horses shoulders, and reached at last the Wisconsin, where the stream might be about a quarter of a mile wide. After trying the ice in several places with long poles, we ventured at last to cross; and scaling a bold bluff at the opposite side, paused a moment at a stone house, owned by a Frenchman, to let our horses blow. A band of Winnebagoes were standing at the door, and as they were all in mourning for some recently deceased relations, their broad blunt features, blackened as they were, made them look like Hottentots. A ride of six miles, through a high rolling prairie, interspersed with massive groves of oak, brought us at last in view of the bluffs of the upper Mississippi, rising in rocky masses to the height of 4 or 500 feet above the bed of that beautiful river, whose iron bound banks and gentle crystalline current, bear but little affinity to the marshy shores and turbid tide which are distinguished by the same name, after the Missouri gives a new character to its waters. Never shall I forget the first view of "The Father of Rivers," as a reach of several miles shut in, partly by its own bluffs, and partly by those of the Wisconsin, with its numerous islets, smiling in the light of the setting sun, looked like some comely lake of the West: girdled, apparently, by inaccessible cliffs on three sides, and keeping the edge of a broad meadow—which in its turn was bound and sheltered by lofty bluffs—on the fourth. That meadow lay now beneath me, and it was Prairie Du Chien. II.

SERMONS ON DUTIES BELONGING TO SOME OF THE CONDITIONS AND RELATIONS OF PRIVATE LIFE; by JOHN G. PALFREY, A. M., Professor of Biblical Literature in the University of Cambridge. 1 vol. 8vo. pp. 370. Boston: CHAS. BOWEN.—We like both the tone and the subjects of these sermons. They are

practical. They come home to the business and bosoms of all. They are catholic, too, in their sentiments, and embrace all: they are free from controversial points; and finally, they seek not to explain, what finite understandings can neither comprehend nor elucidate, but leave to faith what belongs exclusively to the domain of faith.

These Sermons treat of the duties and obligations of social life, and were delivered some years ago to the congregation in Brattle Square, of which the Rev. Professor was then the Pastor. They discuss the duties of the young and the old, of the rich and of the poor, of married life, and of the parental and filial relations. The style is clear, forcible, and polished, and the doctrines such as may be read without offence by all, and by many surely with profit. The book, too, is printed with the usual beauty and accuracy of the Boston press. We make an extract from Sermon X, on "the Duties of the Rich," as exhibiting fairly the manner of the writer:

It is well for us all, my friends to have cares.—There is no one indeed who has them not, if he is disposed to see them; but for any one who is not so disposed, it is happy if there are those which will force themselves upon his attention. For serious cares of any kind make the mind serious, which so far is a great good. Without them it becomes light and giddy. There are persons, who constitutionally seem almost incapable of being led, in the wantonness of their prosperity, to do or wish ill to any human being; whose feelings towards others appear all to be feelings of a superficial, indeed, but as far as it goes, a genuine kindness; but for whom we see, that the wish which a true friendship would dictate, would be that they should have some of those 'changes,' for want of which 'they fear not God.' They are the spoiled children of prosperity. There is nothing substantial in their character. There is nothing deep in any of their feelings. The business of their lives is a weak and capricious self-indulgence. The scriptures, which subject the human character to so rigid an analysis, are faithful in exposing this tendency. 'He gave them their request, and sent leanness into their souls.' What a just as well as strong picture this, of the condition, in which a luxuriance of outward blessings is contrasted with that dearth of all that is best in the mind and heart, with which we sometimes see it followed.—'The prosperity of fools shall destroy them.' How many the instances in which this sentence has been executed; in which minds not absolutely ill disposed, nor incapable under other circumstances of blessing and being blessed, have been intoxicated and made merely giddy and frivolous by too much good fortune, as we call it, and seduced away from every strenuous and honorable application of their powers.—'In my prosperity I said, I shall never be moved.' How natural a boast for a mind inflated by abundance, and by the deference which it brings, and by the habit of seeing its own will a law; yet a boast how presumptuous, an expectation how fallacious, a confidence how sadly ill-adapted to prepare for the changes which time may bring. The very waywardness and eccentric humors, which such a feeling generates, are the occasion of more wants than any prosperity can supply; and the affluent circumstances, which to others seem adequate to obviate every wish, are but experienced by the possessor to increase their number. The feeling is as much at war with the spirit of self discipline and improvement, as with that of content. 'Be not high-minded, but fear,' says the apostle, using the self same expression with that in our text, and conveying a lesson the most needful to be observed by all who are intent on growth in grace. But how little consistent with this humble and sanctifying spirit of self distrust is that vain elation of the mind which we are now considering. And what a stubborn and impracticable religious insensibility does it threaten to create. 'When thou shalt have eaten and be full, then beware lest thou forget the Lord.' This is an admonition, called for by well ascertained tendencies of human nature.—Jeshurun, when pampered, was restive and untractable; 'then he forsook God who made him, and highly esteemed the rock of his salvation.' 'They were filled and their heart was exalted, therefore have they forgotten me.' This is the history of many an envied, but unhappy man's experience; and if it would be going too far to infer that this kind of prosperity is therefore not to be desired, we needs must own that it is not every mind which has the strength to bear it.

THE LIFE OF THOMAS EDDY—comprising an extensive correspondence—by SAMUEL L. KNAFF—1 vol. 8mo—pp 400—N. Y.—CONNOR & COOKE.

In a life, however long, devoted to acts of benevolence and to the improvement of the institutions of charity, of education, of punishment and of reform—there can hardly be found, or indeed expected, any of those stirring incidents which impart a zest to the biographies of men more ostensible on the stage of human affairs. It was therefore not without surprise that, on opening this volume, we found ourselves gradually carried on from page to page, till our interest became thoroughly excited in the modest records of this good man's life. The correspondence with Colquhoun, the famous police magistrate of London, and with other foreigners, well known in the annals of philanthropy, as well as with many distinguished men in our own country, gives both variety and interest to the narrative—which, as a whole, does credit to the taste and feeling of the author.

AIDS TO MENTAL DEVELOPMENT, or hints to parents with an address to Mothers, by a Lady of Philadelphia. 1 vol. 12mo. pp. 340. Philadelphia: Key & Riddle.—This is a reprint, with some modifications, to adapt it to our use, of an English book. The design is good, and we think generally well executed, though liable to the objection of making the children, who are interlocutors in the dialogue, talk too cleverly. This is of bad practical tendency, as discouraging many from persevering in the plans here recommended and illustrated, by ascertaining that their children fall so far short in the nature of their answers, and in quickness of comprehension, of those in the book.

The address to mothers, by the Philadelphia lady, embodies some excellent views on education, and on the importance especially of that education of which home is the only school.

THE CLASSICAL FAMILY LIBRARY, Vols. XI and XII. New York: HARPER & BROTHERS.—These two volumes in continuation of the Classical Library, furnish us with Virgil's Poems, the Eclogues translated by Wrangham, the Georgics by Setheby, and the Æneid by Dryden. The dedication of Dryden's translation to Lord Normanby is also given, and it is, as is well known, an admirable critique on the Æneid.

Praise or extracts for such works as these would be misplaced.

AN ESSAY ON NEW TRIALS by DAVID GRAHAM Counsellor at law.—1 vol. 8mo—N. Y.—HALSTEAD & VOORHIES.

We can to-day only acknowledge the receipt of this well printed volume, treating a very important branch of law. We hope next Saturday to be able to speak of it, from careful examination.

CITY OF NEW YORK.—NEW YORK AND ITS VICINITY.—These are two very well executed little maps, colored, folded up and bound in morocco—so as to be conveniently put in the pocket and carried about.—The maps are executed by D. H. Burr, and are published by J. DIST RUN L.

THE NATIONAL PORTRAIT GALLERY, Part XI., by JAS. HERRING, of New York, and JAS. B. LONGACRE, of Philadelphia; N. York, MONSON BANCROFT.—This number presents us with engravings and biographies of Col. AARON OGDEN of New Jersey, of JAMES FENIMORE COOPER, also a Jerseyman, as we find, though we had always before supposed him a native of this State, and of the Rev. TIMOTHY DWIGHT, of Connecticut. It is an excellent number, both in the execution of the engravings and the biographical sketches—the latter of which, though prone, as is the nature of such notices, especially when applied to living men, to exaggerated estimates of merit, are quite interesting.

COMPANION TO THE NEWSPAPER; London and New York, at WM. JACKSON'S, 71 Maiden Lane.—This is

a capital publication. It is a sort of catalogue raisonné of the principal matters contained in a London weekly newspaper of great circulation and ability, the Spectator,—and furnishes in a quarto volume of some 220 pages, materials of information, convenient for consultation or history, of the greatest accessibility. Every public library at least, and private libraries of any extent, should take a copy of this publication, which is to be continued annually.

Among the items of great interest in this volume for 1833, are the history of, and discussions concerning, the East India charter, the Bank of England, reform in the law of real property, with a general retrospect of public events, &c.

AN ACCOUNT OF JANE C. RIDER, the Springfield Somnambulist, by L. W. BELDEN, M. D.—Springfield: G. & C. MERRIAM.—When we first heard the extraordinary stories concerning the subject of this memoir, we were certainly among the incredulous. We have now read with care and with interest, this account by Dr. Belden—the physician who saw her in her first paroxysm, and followed up the case till a cure was effected—and we can no longer refuse our faith to the truth of the facts related, nor our conviction that—however inexplicable and unexplained, as many of them still seem to us—there was neither imposture on the part of the girl, nor collusion on the part of those around her.

The great distinction in the case of this young person from other extraordinary cases of somnambulism on record, was an incredible power of vision; and, ingenious as we think Dr. Belden's attempt to explain this power, as the result of a diseased and thereby highly excited state of both the eye and brain, we are not satisfied with it. The idea that any conceivable increase of the sensibility of the retina, accompanied by any morbid change that can be imagined of the brain whereby its perceptive powers should be excited to the utmost, can explain the fact of this girl's reading in a darkened room through thick bandages wadded with cotton and placed over her eye lids—the names of strangers so faintly written in pencil, or in such small letters, as to be scarcely legible to persons with all their faculties awake—seems as contrary to the ordinary course of things—as the very fact, which it is meant to explain. We have nothing better, indeed, to offer in the way of solving the difficulty; and must, therefore, be content to believe—by reason of the unimpeachable evidence in the case—and to marvel.

LIFE OF M A-KA-TAI-WE-WA-KIA-KIAK, OR BLACK HAWK; with an Account of the Cause and General History of the late Indian War, dictated by himself. 1 vol. Boston: RUSSELL, ODORNE & METCALF.—This is the first specimen, we believe, known to our literature, of a savage's auto-biography. It was dictated by Black Hawk, after his tour in the United States, to Antoine Leclair, the United States Interpreter to the Sacs and Foxes, who vouches for the care and fidelity with which it is rendered into English. It is dedicated by Black Hawk in the Sac tongue, to General Atkinson, his conqueror. It refers the cause of the hostility of the Sacs against the Americans, to the fact of treaties surreptitiously made by them, with unauthorized agents of the Nation, which, when attempted to be carried into effect, were felt as grievous wrongs and outrages. We do not doubt if there were historians among the Indians, that such or similar would be the origin of most, if not of all, of what are called Indian wars, but which are, in fact, more predatory excursions to seize by force, the lands we covet and do not own.

The following notice of some of the most interesting points in this history we take from the New England Magazine, for this month:

Behold Black Hawk, then a general, in the British service, and a more respectable one than Sir Hudson Lowe. Fire-arms, ammunition, tomahawks, and clothing, were distributed, and General Black Hawk

started on the next morning, with five hundred braves, to join the allied army, below Detroit.—There was, soon after, a fight, in which, says the general "the Americans fought well, and drove us with considerable loss. I was surprised at this, as I had been told that they would not fight." The same success followed the attack of a fort, and Black Hawk became tired of his new service,— "the success being so bad, and having got no plunder." He remarks, that "the Americans shot better than the British, but are not so well provided for." In fact, our friend Bull always fights best with a bellyfull; but a Yankee is more pugnacious when hungry. Having left the service, Black Hawk "humiliated himself before the Great Spirit, and returned thanks for preservation through the war." He was never ferocious, and he has recorded, that he often spared the unwarned and helpless. When on an excursion against the whites, to avenge the death of his adopted son, he spared those he came to kill.— "We had not proceeded far, before we met the man whom we supposed we had killed, as he was scalped, staggering like a drunkard, all covered with blood. This was the most terrible sight I had ever seen. I told my comrade to kill him, to put him out of misery,—I could not look at him. I heard a rustling in the bushes, and distinctly saw two little boys concealing themselves. I thought of my own children, and passed on without noticing them."

Black Hawk was ever a good dreamer. The Great Spirit, in a dream, gave him particular directions where to find a large snake, viz: down the bluff, at a creek, in the top of a hollow tree that had been cut down. The snake was to point out with his head, the direction of an enemy. These were two American officers.

At a conference with American agents at St. Louis, Black Hawk and other chiefs, replied to the Commissioners, that "what they had said was a lie," and he seems to have been surprised that such a form of speech should excite resentment. "Here," said he, "for the first time I touched goose-quill to paper, not knowing, however, that by that act I consented to give away my village." Jack Cade was similarly taken in. "Some say," said he, "that it is the bee that stings; but I say it is the bee's wax; for I did but seal a bit of paper, and have not been my own man since."

The loss of two children brought much sorrow upon Black Hawk. He built a secluded hut and reduced himself to poverty. He blacked his face for two years; drank water in the middle of the day, and ate a little boiled corn at sunset. This he did hoping the Great Spirit would take pity on him; and, said he, "I never take a drink of water from a spring without being mindful of his goodness."

But the treaty was to be executed, and the Indians were called upon to leave their village. As the chiefs did not admit that they had knowingly sold it, there was a difficulty in getting them away. Besides, said Black Hawk, "my reason teaches me that land cannot be sold; nothing can be sold but such things as can be carried away." He was the "Village Hampden," and resisted all encroachments on his field. He resolved not to quit, and the Prophet assured him that he would not be removed. General Gaines, however, defeated the prediction, and Black Hawk "touched the goose-quill" to another treaty, and crossed the Mississippi.

But Black Hawk and the Prophet were making ready for war, and the "White Beaver" (General Atkinson) received a message, "If you wish to fight us, you may come on." The events of the war have been detailed in the newspapers. Pressed on all sides, vanquished but not humiliated, he gave himself up to his enemy like Weathersford, Themistocles, and Napoleon. He was carried to Washington, and visited other cities. He was astonished at the good trail which he found for his carriage—meaning the Cumberland road: he saw many wigwags and villages, but could see nothing in the country to induce the people to live in it. The Railroad was yet more astonishing, though Black Hawk preferred to travel on horseback.

The Great Father at Washington he supposes has seen as many winters as himself. "His wigwag is well furnished with every thing good and pretty."—At Washington, Black Hawk was well received by the people, and especially, as he says, by the squaws.

He was surprised at the size of Baltimore, and of the "big village where they make medals and money." A New York, to his utter astonishment, he saw a man ascend in a balloon till he was no longer visible: one of his young men asked if he was going to see the Great Spirit. "Every body," said he, "treated us with friendship. The squaws made us many handsome little presents. They were very kind, very good, and very pretty—for pale faces."

The publisher of the American edition of the "Foreign Quarterly" and "Westminster" Reviews, has given notice that the republication will be discontinued. The reasons assigned are the dissatisfaction produced throughout [the] Southern States [at the course of the Westminster Review during the last three quarters of 1833, on the subject of domestic slavery in this country, and the general pressure of the times, which have produced a great falling off in the circulation.

The intelligent correspondent of the New York American, who is now travelling in the far West, continues his interesting letters. We renew the hope, expressed some time ago, that these letters may be collected and preserved in a volume. They furnish more fresh and graphic sketches of Western scenery, and better illustrations of Western manners, than we remember ever to have seen any where else.

We may now say, we believe, with some confidence, that the desire repeated in the above paragraph from the Alexandria Phoenix, and which we may add has been manifested in various quarters, for the publication in a book, of the letters from the West of our correspondent H, will be complied with.

They will, it is expected, when completed, constitute a handsome volume, comprising much information in detail, statistics, prices of land, produce, &c., which was not deemed as well suited to the columns of a newspaper.

We have several letters now on hand, which lose nothing of their interest or freshness as they increase in number.

FOREIGN INTELLIGENCE.

LATE FROM EUROPE.—The ship *Victoria*, from Liverpool, brings us London papers to the 3d ult. inclusive, and Liverpool papers of the 4th. The accounts are not particularly interesting, and therefore, as we are much pressed for room, we do not make many extracts. Sir Thomas Denman has been made a Peer.

FRANCE.—The Ministers have succeeded in carrying their law on the subject of associations, nearly in the state in which they first proposed it,—all the amendments at all calculated either to modify its oppressive character or even to limit its duration having been rejected by large majorities. At the final debate, which took place on the 25th ult., M. Page spoke strongly against the measure, and in the course of his speech made the following solemn protest against it:

"If (said the Hon. Deputy) a Frenchman, an honorable man, wishes to form a union to propagate, strengthen, or preserve Christianity—I am his man, in spite of your Ministers and your law.

"If a Frenchman, an honorable man, wishes to form a union, to extend charity and assistance to the poor and laboring classes, to the sick, or to the workmen out of employ—I am his man in spite of your Ministers and your law.

"If any Frenchman, an honorable man, wishes more extensively to diffuse acquired truth, sound doctrines, and the knowledge which appears for the morality of the future and the happiness of mankind—I am the man, in spite of your Ministers and your law.

"If any Frenchman, an honorable man, wishes to secure to his country the safeguard of electoral independence, and oppose those disgraceful elections, which deliver political venality up to Ministerial corruption—I will be with him, in spite of your Ministers and your law.

"The slave of all just laws, the enemy of all unjust laws, between the prosecutors and their victims I will not hesitate. I know no human power which can make me apostatize from God, humanity and France. I will disobey your law, to obey my conscience."

On the division, the numbers were for the bill, 246,—against it 154,—majority 92. Several of the societies in the provinces have already protested against the law, and announced their determination to disobey it. Some of the most distinguished members of the *Société des droits de l'homme* have deemed it expedient to quit Paris. The veteran patriot, Lafayette, has delivered the following written protest against the measure:

"The new and progressive attack on our July re-

volution has been so completely manifested on both sides in the debates that my forced absence from the Chamber is a subject of regret for myself alone. I could, nevertheless, have certified to the heirs of 89 and 1830 that, even under the ancient regime, such an interdiction, subject to the good pleasure of the police of Sartines and Lenoir, would have excited astonishment and indignation, even in the Saloons of Versailles. I now confine myself to adding my personal protest to the numerous votes of my honorable colleagues against this anti-social consequence of a system, the origin and tendency of which I pointed out long ago. "Paris, 26th March, 1834.

(Signed)

"LAFAYETTE."

The *Tribune* has the following:—The *Union de Juillet* held a general meeting yesterday, under the presidency of General Lafayette, when they entered a protest against the Associations' Bill, and pledged themselves not to submit to it! Without making public things which concern the society alone, we say that more than one deputy was present at the meeting, and that M. Lafitte was not the least energetic in recommending resistance."

SPAIN.

BAYONNE, March 25.—Quesada has at last received instructions to commence operations, and this evening we learn that his division is already on its march, but the insurgents, as soon as they got intimation of it, immediately put themselves in motion, and are proceeding towards our frontiers. At Elisondo the municipal authorities were seized with panic, as well as the workmen who were making uniforms for the Carlists, who all took flight towards Balcarles, and spread alarm throughout the country. Numerous persons are emigrating from the country, and the place is full of persons who have fled thither, conceiving themselves in danger by the proclamation of Quesada.

The following is an extract of the *Boletín de Comercio*, respecting the convocation of the Cortes, and which it states, is obtained from quarters which are usually well informed—

There will be two Chambers, one styled 'Proceres del Reyno,' (Peers of the realm) and the other, 'Procuradores del Reyno' (Deputies of the kingdom).—The Chamber of Peers will be composed of the Archbishops and Grandees of Spain and Castile, Generals who have distinguished themselves, Magistrates, Landed Proprietors, Principals of Manufactories and Commercial Establishments, Directors of Public Instruction, and those who have rendered service to the country. The sittings will be public, and the dignity of the Peerage conferred for life. The Chamber of Deputies will be composed of persons freely elected, who have an income of 12,000 reals, and have attained the age of 30.

Government servants, lawyers, physicians, clerks of the supreme tribunal, and surgeons, may be elected Deputies, when possessing only half the above mentioned income.

Every elector must be possessed of an income of 6000 reals. The population of the places will be the basis on which the number of members to be returned will be decided, who will be elected for three years. The Cortes will vote the taxes. The King will have the power of convoking, provoking, and dissolving the Cortes; but he must convoke another for at least a year. At the death of the King the Cortes will assemble, that the heir to the throne may swear to protect the laws. The Cortes will also meet on any extraordinary occasion.

The Indicator of Bordeaux of the 27th inst. has the following of the 25th from Bayonne:—"The faction of Biscay is entirely dispersed, but the vexations of the inhuman Zabala are not at an end. It is said that Gen. Espartaco, in consequence of arrests made by Zabala at Legneitio, has taken several of the Carlist inhabitants of the same town as hostages. In consequence of the entry of the insurgents in to Vittoria, the Queen's troops made 52 prisoners, including 7 officers, who were shot, as well as a man who fired at a conscript from his window, by order of Gen. Ossa." It has the following from Madrid, dated the 19th inst:—"By a Royal decree, the Queen has named Patriarch of the Indies Don Manuel Frayle, Bishop of Sigüenza. By another decree Don Jose Maria Manesca has been named President of the Royal Court at Madrid. Don Pedro Velleli is named Corregidor of Madrid. Major-General Miguel Tacon has been appointed a Lt General, and Capt. General of the Isle of Cuba."

It is said the King of Holland has refused the pardon for which POLAKI prayed in his petition, or to grant any mitigation of the sentence pronounced on him for stealing the Princess of Orange's jewels.—[Times.]

By the packet ship *United States*, Capt. H. dredge, from Liverpool, we have Liverpool papers of the 8th, and London of the 7th April. It will be seen that a new French Ministry has been formed.

[From *Bell's Weekly Messenger*, April 6.]

The foreign intelligence of the week, so far as it relates to France, is not without interest. The American Indemnity Bill was rejected in the Chamber of Deputies on Wednesday by a majority of 176 to 168. Two of the Ministers, the Duke de Broglie and General Sebastiani, spoke at great length and with much vehemence in its support, and all the Ministers voted for it. But it was rejected by a majority of eight in a very full Chamber, much, very much, to their credit.

The Duke de Broglie and General Sebastiani immediately tendered their resignations. M. Guizot shortly after followed their example, and it was expected that M. Humann, the Minister of Finance, would also resign. The Cabinet is thus broken up. An attempt will be made to induce the Duke de Broglie to remain, but it is supposed that it will not be successful.

The consequences of the change of ministry in France at the present moment, says an able contemporary, may be of the utmost importance. It will be clearly impossible to carry the associations' law into effect by a divided and feeble administration, in the present temper of France, especially on the eve of a general election. Who are to be the successors of the resigned ministers is not yet fixed.

[From the *London Times*, of 7th April.]

We have waited with some anxiety, or at least with much interest, to learn the new cast of the French Ministry, the completion of which appears in the *Moniteur* of Saturday.

It was scarcely possible to conceive that the Duke de Broglie could resume his portfolio; after his resignation of office had been recorded in the *Moniteur*, and in the face of a vote of the Chamber of Deputies, which, though perhaps now repented of, could not be reversed. But it is not easy to imagine how he alone should have been expected to resign, since the treaty which he defended so ably in the Chamber was made in the time of his predecessor, and must have had the sanction of the whole of his colleagues, as well as his own. However that may be, his place is not yet adequately filled, and cannot perhaps be so worthily occupied by any French candidate for the Foreign office.

If, however, the French public has to regret the change in the Foreign Department, which has deprived them of the zeal and talents of de Broglie, some of the other appointments in the new Cabinet will appear still more objectionable. If there be one man in France more unpopular than the late Minister of Justice, Barthe, it is M. Persil, who is nominated his successor. The continued assaults of the latter upon the press, and the desire which he has shown to alter the constitution of juries, will make his appointment appear the result of a contempt for public opinion, rather than a compliance with the dictates of a moderate policy. The transference of M. Thiers from the Board of Trade to the Ministry of the Interior is an event of no consequence; but surely M. D'Argout must have thought himself the victim of an intrigue in being obliged to exchange the honors and emoluments of the Minister for the place of the President to a banking establishment.

We quote the abstract of the new appointments from the *Moniteur*, premising that the modifications of the Cabinet are said by the French journals of Saturday not to have been completed till Friday evening. The official journal promulgates Royal ordinances, by which M. Persil, Deputy, Procureur General of the Royal Court, is appointed Keeper of the Seals, and Minister of Justice and of Worship, in the room of M. Barthe, who is created a Peer of France, and made First President of the Court of Accounts, in the room of M. Barbe Marbois, who resigns, but who is invested with the dignity of Honorary First President of the Court of Accounts.

M. Thiers, Deputy, Minister of Commerce and Public Works, is appointed Minister of the Interior in the room of Count D'Argout, who is made Governor of the Bank of France in the place of the Duke de Gaete.

M. Duchatel, Deputy, is nominated Minister of Commerce in the room of M. Thiers.

The separation of the attributions of the Ministers of the Interior and of Commerce will be hereafter determined by a special ordinance.

Vice-Admiral Count de Rigny, Deputy, and Minister of the Marine and Colonies, is appointed Min-

ister of Foreign Affairs in the room of the Duke de Broglie.

Vice-Admiral Baron Roussin, Ambassador at Constantinople, is named Minister of the Marine in the room of Admiral de Rigny, who, however, will continue to exercise the functions of his late office till the arrival of Admiral Roussin.

M. Martin du Nord, Deputy, and Advocate General of the Court of Cassation, is appointed Procureur General of the Royal Court in the room of M. Persil.

It will be seen, therefore, that the Ministers who retain their previous offices are Marshal Soult, President of the Council and Minister of War; M. Humann, Minister of Finance; and M. Guizot, Minister of Public Instruction.

"The Sultan has," says the *London Spectator* of 29th March, "replied to Lord Ponsonby's interrogations respecting his famous treaty with Russia, in the most firm and haughty tone. He has made up his mind to keep his engagements with the Czar, in spite of the hatred which his subjects bear to the Russian alliance. The *Times* correspondent at the Porte says—

"The Russian fleet, with 25,000 men on board, is waiting at Sebastopol for sailing orders: considerable bodies of troops are advancing in the direction of the Danube; and by a late ukase, the 60,000 men raised in Moldavia and Wallachia have, though Turkish subjects, been incorporated in the Russian army."

"Excepting Lord Palmerston, no one, we imagine, places any confidence in the pacific professions of Russia. These warlike preparations give the lie to all such palaver."

A letter from Constantinople, dated the 4th ult., the statements in which, if founded in truth, seem greatly exaggerated, has the following: "It is certain that the steam packet which recently conveyed Halil Pacha to the Dardanelles had a detachment of artillerymen on board; it is also certain that the fleet and Turkish army are recruiting with extraordinary activity, and that Russia has just levied troops in Moldavia and Wallachia. By what right? All that we know is, that the Russian fleet stationed in the port Sebastopol is ready to set sail, at the first signal, for Constantinople; that Nicholas has sent to Achmet Pacha 1,000,000 of ducats, proceeding from the debt of Turkey to Russia; that he has granted the Sultan eight years to pay off his debt; that a serious revolt, the instigators of which are unknown, had broken out in Bagdad, and in Kurdistan, and that the Porte has been obliged to send an imposing force there; that Constantinople is in a deplorable condition; that its trade has never been so slack; that nothing but a miracle can save the Ottoman Empire, and unfortunately the times for miracles are past."

The *Augsburg Gazette* of the 1st inst. has the following, of the 26th ult., from Vienna:—"It is thought that the Congress will hold a grand sitting this week, which will be attended by M. Ancillon. Resolutions will then be agreed to, sufficient of themselves to contradict the injurious reports sent abroad by the French journals relative to the intentions of the Germanic Governments, and to the debates of the Congress."

The *Madrid Gazette* of March 27, announces that a Plymouth vessel, called the *Express Packet*, laden with 2,500 muskets, 200 barrels of cartridges, 180 barrels of gunpowder, and other warlike stores for Don Carlos, has been captured in Vigo Bay by the Government Guardacosta brig the *Argus*. The same *Gazette* contains two decrees, signed on the 26th, at Aranjuez, one of which orders the seizure of the temporal property of all the ecclesiastics who have quitted, or may quit, their churches to join the rebels; and the other commands the suppression of all convents the members of which shall have mixed themselves up with the plots of the Carlists, either by joining the insurgents, concealing ammunition or warlike stores, or assembling clandestine juntas.

PORTUGAL, OPORTO, MARCH 24, four o'clock p. m.—The governor of the city has just received a despatch of four lines from Admiral Napier, who says—"This morning I took Camina by surprise, and Viana will be shortly in our possession." The Admiral landed there with about 500 men, brought from Lisbon in the steamers *George the Fourth* and *Lord of the Isles* and mastered the place (where the feeling is strongly in favor of the constitutional cause) without opposition.—[*Times*.]

Before the arrival of M. de Sarmiento it was resolved, as I advised you at the time, to pass the Portuguese frontier in considerable force, for the purpose of

protecting the frontier provinces from the menaces of Don Carlos and his ally of the House of Braganza.—Instead of a mere inroad however, in quest of a fugitive pretender, the troops of the Queen of Spain, whether with or without a formal declaration of war, will assume an attitude directly hostile to one branch of the House of Braganza, and will act of course in perfect accordance with the views of the other. This was one of the leading objects of the mission of M. de Sarmiento to Madrid, and it will not be completed to the satisfaction of men of liberal principles in either of the two kingdoms, until the whole peninsula is united in action, as it is already in interest, by the conclusion and ratification of a treaty of alliance offensive and defensive.

NAPLES, March 15.—The union of Prince Leopold, Viceroy of Sicily, and second brother of the King, with the Princess Mary, daughter of the King of the French, is no longer a matter of doubt: the marriage is to be celebrated in the course of this spring. Much hope is placed in the alliance, the young Princess having been educated under the immediate eye of Madame Adelaide, whose cultivated understanding and richly endowed mind are well known. In Palermo, which is to be the residence of the Royal pair, the news has created the liveliest sensation, the young Princess having been born there. It is said that the Queen of the French will accompany her daughter here; at a later period the Dukes of Orleans and Nemours will also pay us a visit. This has given rise to a report that our Sovereign had changed his opinion relative to his sister, the Queen Regent of Spain. Interesting discoveries have been made at Torre del Annunziato; it is not yet known whether the temple being now cleared there, forms part of a grand Roman villa, or whether it be the commencement of a third buried city, like Herculaneum and Pompeii. Communication is now opened with Greece. Vesuvius is sending forth slight eruptions. The *Gazette* quotes the funds at Vienna, on the 22d inst.—Metallics, Five per cents., 98 1-16; Ditto, Four per cents., 88 7-16; Bank Actions, 1,248.—[*Angbarg Gazette*.]

The *Frankfort Gazette* of the 29th ult. announces the death of the reigning Duke of Anhalt-Bernburg, father of the Princess Frederike of Prussia.

Recent accounts from Napoli di Romania announce the death of the Greek Captain Colocotroni, in the prison in which he had been confined several months; or having taken part with several other Chiefs in a conspiracy against the Government.

CASPER HAUSER—whose mysterious story and recent death by violence, caused so much interest, would appear by the annexed paragraph, to have entitled destruction too upon his friend, patron, and biographer, the Jurist *Fuerback*.

According to the Hanoverian paper, the celebrated German Jurist, *Fuerback*, who died lately at Frankfurt, during a journey undertaken for the benefit of his health, is now generally believed to have been poisoned. He was a kind patron of the unfortunate Casper Hauser, and the most zealous in his endeavour to discover the murderers of that mysterious youth.—[*German Paper*.]

COAL vs. GOLD.—In a work lately published by a Spaniard, there is a comparison between the produce of the gold and silver mines in America and the coal mines in England, from which it appears that the gross value of the annual produce of the coal mines, which is 18,000,000 tons, amounts to 450,000,000 francs, including the wages and other charges; whilst the produce of the gold and silver mines, including the same charges, is only 220,500,000 francs; showing a balance in favor of the coal mines of England, over the gold and silver mines of the New World, of no less a sum than 227,500,000 francs.

The Prince of Orange, if we are to credit the private correspondence of the *Times*, is still suspected of having made away with his wife's jewels, notwithstanding the man named Polari has confessed that he was the thief. It is said that Polari, who might have escaped by taking advantage of a technical blunder in the proceedings against him, appeared eager to be convicted; and now it is supposed he will be pardoned.

SUMMARY.

The Georgetown Union, of the 23d inst., says—"We are informed all the Pee Dee country is under water, and the injury to the rice field banks must, in consequence, be very serious. The tides for several days past, were higher than we recollect, without the agency of a heavy gale."

CURIOUS PHENOMENON.—The Montreal Herald of 28th, states that—

"On Saturday morning, a very singular phenomenon was observable from the river bank in front of our city. Those who are blessed with a very strong sight perceived, as they supposed, an immense number of small birds in the air, but at such a height as to render even birds, in that situation, a curiosity.—We happened to be passing, and in vain strained our eyes to discover the objects which others were contemplating with so much eagerness—by the help of a glass, however, we at last perceived what was to all appearance an immense flock of small birds.—These objects passed away in millions before the current of the light wind then blowing, but many descended lower than the rest, until easily discernable by the naked eye. At length they approached the earth, and proved to be maple leaves of an unusually large size. Many of them were picked up by the citizens, and we have kept one. Whence they came, or how they got there, are questions which furnish a wide field for conjecture. One shrewd fellow observed, 'that this must be the fall of the year in the moon, and that they certainly came from thence.'"

[From the Baltimore American of Saturday.]

Great Aeronautic Expedition.—The circumstances attending the second splendid balloon ascension of Mr. Mills, on Thursday afternoon, render it one of the most lengthened and interesting aeronautic expeditions ever made. We mentioned in yesterday's paper the particulars of his departure from Fairmount, and the apparent course he had taken; and are now enabled to supply some very interesting details of his long and rapid flight through the upper regions. His first course, after ascending, was about south east, but in a short time a counter current of air wafted him in an opposite or westerly direction, immediately over the city. His flight westward was only as far as a point above the long bridge over the Patapsco, when he encountered an adverse current, which carried him back again in an easterly course.

During all this time Mr. Mills continued to rise, by occasionally throwing out ballast. His compass now proved of no service to him, from the constant rotary motion which the balloon assumed, first swinging round in one direction and then revolving in a contrary one. The course of the balloon was eastwardly. At forty minutes after five, Mr. M. encountered a violent snow storm, with the thermometer down to 34 deg. Besides being obliged to endure its peltings he was subjected to a thorough drenching from the melted snow, which thawed as it fell on the balloon, and ran down from its neck to the car immediately under it. At the same time, also, a body of clouds passed beneath him, and he lost sight of the earth altogether. The storm, however, soon passed off, and, except the drenching, left him unharmed.

At six o'clock he had attained his greatest elevation, which according to his estimate and the indications of the barometer, was upwards of two miles.—The thermometer was now down to 33 deg., or only one degree above freezing point. Mr. M. all the while was going eastwardly, passing over the light house at North Point, and across the expanse of the Chesapeake Bay towards Kent County, on the Eastern Shore. He had now had recourse to his valves, and was gradually descending. After having passed into Kent County about half a mile, he made preparations to land, and had descended within about five hundred feet of the earth, when the balloon was taken by a sudden and violent gust or current of wind from the east. This was at 35 minutes after six. In an instant after the wind struck the balloon, it was driven with the swiftness of an arrow, and in the short space of seventeen minutes, he was carried back to North Point, a distance of fourteen miles across the Chesapeake Bay!

Now as heretofore, Mr. M. preserved an undaunted coolness and self-possession, and as he was careering across the waters with the fleetness of the wind itself, he discharged gas enough to bring him within two hundred feet of the surface. As the anchors struck the water they rebounded with a force that gave him a pretty distinct notion of the rate at which he was travelling. As soon as he came over the land at North Point, the wind greatly abated, and at ten minutes before seven he effected a safe landing on the farm of Mr. Lynde Goodwin, from whom and his family he received every assistance in securing his balloon and apparatus in perfect order.

Thus terminated this most extraordinary aerial voyage, prosecuted for three hours, to the distance of about fifty miles; and for the greater part at an elevation of one to two and a quarter miles. After this feat, Mr. Mills, who, it should be borne in mind, is a young Mechanic of Baltimore—self taught, and

dependent alone on his own unaided efforts,—may fairly take rank with the most successful aeronauts of the age.

The following table shows the observations made by Mr. Mills on the barometer and thermometer, at various periods during his voyage. He left Fairmount at ten minutes before four o'clock, P. M.

TABLE OF OBSERVATION.

Time.	Barometer.	Thermometer.
h. min.	in. 10th.	deg.
3 57	20 6	63
4 15	25 8	59
4 25	24 2	54
4 40	24 1	51
4 55	23 9	43
5 10	23 4	41
5 25	23 0	46
5 40	22 9	34
5 55	22 8	34
6	22 7	33
6 15	53 0	36
6 20	23 4	41
6 25	24 2	58
6 35	27 0	58

Appointments by the Governor, by and with the advice and consent of the Senate, May 3.

New York.—Stephen Allen, Benj. M. Brown, Saul Alley, Charles Dusenbury and William W. Fox, for Water Commissioners for supplying the city of New York with pure and wholesome water.

NAVAL EXAMINATION.—The Board for the examination of Midshipmen whose warrants bear date prior to 1829, will convene at Baltimore on the first Monday of May next. Commodore Jacob Jones will be the President of his Board.

AMERICAN LYCEUM.—The Fourth Annual Meeting of the Society opened yesterday morning in the United States District Court Room, east end of the New City Hall, or Old Alms House.

President Duer presided, and Wm. B. Kinney officiated as Secretary.

Forty-two Delegates were reported from different Lyceums and kindred associations in different States; among others we heard the names of Judge Clayton of Georgia, Hon. Wm. B. Calhoun and A. H. Everett of Massachusetts, Dr. Weeks, President of the New Jersey State Lyceum, &c. Among the invited guests are Don Tomas Gener, the President of the Cortes of Spain, the Marquis Aycena, and other foreigners of distinction.

The morning sessions will commence at 9, and the afternoon at 4. The following subjects will be particularly discussed:

1. The propriety of establishing central schools for the education of teachers.
 2. The applicability of the monitorial system to schools generally.
 3. Corporal punishments.
 4. The means of introducing the elements of natural history into common education.
 5. The propriety of teaching the ancient languages in common schools.
- Interesting reports and essays may be expected on various subjects.—[Daily Advertiser.]

The following useful Table of Bank Notes received in deposit at our Banks, was politely presented to us yesterday by the receiving Teller of the Phoenix Bank.—[Gazette.]

Farmers' Bank, Troy,
Bank of Troy, do
New York State Bank, Albany,
Canal Bank, do
Mechanics' and Farmers' Bank, do
Saratoga County Bank,
Ulster County Bank,
Bank of Newburgh,
Catskill Bank, Catskill,
Farmers' Bank, do
Westchester County Bank,
Hudson River Bank,
Dutchess County Bank,
Bank of Poughkeepsie.

And \$100 bills only of Troy City Bank.

100's of Merch's & Mechanics' Bank, Troy.
100's and 50's of Com'l Bank, Albany.
100's and 50's of Lansingburg Bank.
10's and upwards of Sussex Bank, Commercial Bank of Amboy, and Farmers' and Merchants' Bank of Middle Point.
5's and upwards of State Bank, Elizabethtown; State Bank, New Brunswick; State Bank, Newark; State Bank, Morris; Mechanics' Bank, Newark; Newark Banking Insurance Co.; Farmers' Bank, Rahway; Orange Bank, county of Essex; Norwich Bank.

All denominations received in deposit by the several Banks of this City.

Splendid Fire Engines.—We do not believe there is in the world a more magnificent thing of the sort, than the new Engine belonging to the Columbian Company, and which that spirited association have been exhibiting to their fellow citizens at the Engine House in the rear of St. Paul's Church, at the corner of Vesey and Church streets. The frame of this elegant machine is of very superior construction, and the ornamental appointments are of the costliest and most tasteful description, as well indeed they may be, since some of our most meritorious artists have been employed in the work. The carving, which is the work of Watkins & Barry, Chatham square, is done in mahogany, but so beautiful is the gilding and bronzing, (by Riley Beardman, 249 William st.) that it would be taken at once for solid metal. The plating is superb, and is by George Rudd, 549 Broadway; the casting by Wallace & Bunce, of Spruce street. The painting is by Weir, and of course is excellent, as well in design as in execution. The back is painted by John Quidor, 46 Canal street, and deserves great praise. The motto of the company—"Actuated by benevolence, impelled by emulation"—is not only beautifully engraved, but is much truer to the intent and nearer to the actual character of our gallant fire companies than most mottoes are. The back scene, representing the parting of Otwa and Azula, from the curse of Talhoosin, is uncommonly fine. In short, the whole work reflects the highest credit, as well to the various artists who have been employed in its construction and decoration, as to the deserving Company of enterprising young men to whom it belongs.

By the by, the whole existence of such a body as our firemen—volunteers as they are altogether in arduous, fatiguing, and often perilous duties, seems to us, in a degree, characteristic and peculiar.

In London, the firemen receive regular pay, and are a body apart. In Paris, they are a military corps—*Sapeurs et Pompiers*. In our American cities they are young men of all pursuits, who spend time, labor, and money—much money sometimes, as the decorations of the engine above described will prove—for the general good without any compensation to be named: for the exemption from jury duty and a portion of taxes is nothing in comparison with their sacrifices. Yet there is among these volunteers much skill, and probably more emulation, than in the paid servants or soldiers of other countries.

The Lost Mail.—A letter from the Post Office at Columbia, to the Post Master in this city, dated the 18th, says, "I have been informed that it was the Great Mail which was lost in the river on Sunday last. They have succeeded in getting the way mail out of the river."

THE LOST MAIL FOUND.

Post Office, Camden, April, 21st, 1834.

Mr. MICOV:—Sir—The large Augusta Mailbag from this Office, that was lost in the river on Sunday the 13th, was found by a negro, nine miles below the Ferry, lodged in a raft, and brought to this Office last evening. It is in a very wet, bad state. Your letters, with the Way-bill dated 12th, were all safe, and I think all the rest will be safe. I am drying and putting them up in as good a state as I can, before I forward them.

Yours, &c.
T. THORNTON, P. M.

Shipwreck.—The Boston Transcript says—"We have seen a letter from Captain Isaac Percival, of the schr. General Jackson, from this port, on a sealing voyage, dated at the Isle of France, in December last. He states that after leaving St. Salvador (no date given) he proceeded to the Island of St. Paul's, where he found twenty-one poor unfortunate beings, the only survivors of ninety-one men, women and children—crew and passengers of the English ship Lady Monro, cast away there. They had been shipwrecked ten days, but the bodies of the dead remained unburied. After performing the unpleasant task of committing the putrid bodies to the earth, he embarked with the survivors, on board his vessel, and carried them in safety to Port Louis, in the Isle of France. The Lady Monro was commanded by Capt. John Aiken. She sailed from Calcutta on the 27th June, and was wrecked on the night of the 11th October."

We have been informed that a young man, son of Mr. Brass, near Kingston, was attacked and devoured by wolves last week in the woods 14 miles from this place. The young man was connected with some Indians in the vicinity, and had been missing two or three days; search was made and part of his skull, and some other bones were found. Our information

is positive, or else we should be inclined to doubt the report. The wolves are very numerous in the woods this season.—[Kingston (U. C.) Herald.]

STEAMBOAT DISASTER.—A letter to the Postmaster of New York, from Columbus, Geo., announces that the mail boat "Star of the West," plying between New Orleans and Mobile, burst her boiler on the 18th ult.,—killed two persons and injured others—all in confusion, and no mail from New Orleans, says a bill from the Mobile Post Office.

ANOTHER.—The St. Louis Republican of 17th ult., says—"By an arrival from the Upper Mississippi, we learn that the Steamboat *St. Louis*, bound to *Galena*, has burst her boiler, by which 12 or 14 persons were killed."

The accident happened in attempting to pass the Des Moines Rapids. The stern of the boat struck upon a rock and careened her over—the water in the boilers of course running to the lower side. In this situation the boat remained for twenty minutes or half an hour, when she righted, and the sudden return of the water into the boiler produced an instantaneous explosion. The names of the sufferers are—Perkins, the Engineer, killed; Miss More, blown overboard and lost; Mrs. Moore and son, dangerously scalded, and three other children killed; Mrs. Luckett, from Mill Creek, Illinois, badly scalded; Isaac Mars, dying when the account left; three Germans dangerously scalded, and three other persons slightly injured. The *St. Louis* was chartered for the trip from New Orleans to Galena.

There seems to be a considerable excitement among the lawyers, and in the newspapers of Cincinnati, on the subject of a Clerk to the Court. The grounds of the original dismissions are not stated, but we notice among the prominent facts, stated in large capitals, the certificate of one of the Judges that an offer of *one thousand dollars* had been made to him for his influence in obtaining the office for the successful applicant. It must be a snug birth, and as the judge did not take the money, there is a handsome sum saved in the outfit.

THE EARTHQUAKE IN PASTO.

[From the *Journal of Commerce*.]

PROVINCE OF PASTO, 5th FEBRUARY, 1834.

To the Honorable the Secretary of State for Home and Foreign Affairs.

SIR—In my communication of the 29th of January, No. 5, I promised, through the medium of your Excellency, to detail to the Supreme Government, the remarkable events occasioned by the Earthquake of the 20th of the same month; and I take the present occasion of fulfilling my promise with reference to whatever information I have received from the Political Chiefs of Pasto and Tuquerres, touching this subject, in compliance with my directions to them.

The Executive ordered a survey to be made of all the buildings which remained standing in the former city; and the result has been, that the ward of Francisco, is ascertained to have suffered least, since the greatest part of the houses in that district, although injured, may be nevertheless inhabited, because they are not bulged out, but the rest of the edifices in the city, which remain not destroyed, would be pulled down to their foundations, from their utter insecurity and their danger to the public; also the number of the dead hitherto found is 51, and of the mutilated 50.

The Temples and Cloisters of Monjas, of Merced, of San Augustin, of San Francisco, and Santa Domingo, must be raised anew from their foundations, as also the churches of San Sebastian and Santiago, the Public Bakery and Town gate.

To restore the cathedral to its former condition will be attended with the least expense of any of the churches; because the steeple and Frontispiece have alone fallen, and the fissures in the main walls are but trifling.

The villages in the neighbourhood of the city of Pasto, namely, Laguna, Mocandino, Buessaquillo, Pejundino, Puerres, Cunchalla, Tamondino, Tongovito, Gualmatan, Pandiaco and Tesucal, have all lost their churches, and the two first named towns lost some of their thatched houses and five of their inhabitants.

The parishes of Malatuy, Yacuanquer, Tambo, Buiaico, Funes, and their neighbouring parishes, have likewise had their churches destroyed, their Plantations and tiled houses; but that lamentable loss of life has not been incurred there, which befel Pasto and the parish of Sibundoy, whither I have sent two Commissioners to examine whether the origin of the

Earthquake may be traced to one of its mountains or lakes.

The Commissioners report, that at the right of a large Lake in the District of Sibandoy, a small rising ground is observed, which has vomited from its bosom large pieces of rock, and that huge and profound caverns are in the neighborhood surrounding the Desert called Bordoncillo; that almost the half of this Desert has been precipitated into the bowels of the Earth and the other part raised as it were above the surface, till it had formed a mountain of similar origin, situate between Sibundoy and Aguavico, which in its formation overspread a great deal of the original soil. The Commissioners further state, that this mountain has, from the successive convulsions of the earth, mouldered away, covering the high roads, and causing the formation of immense marshes in the neighborhood; that portions of the earth, precipitated occasionally from its tops, fell into the bed of the river Balsayaco, and obstructed its course, the sudden and impetuous overflow of which destroyed the lands and houses of the people of Santiago, forcing its waters even as far as Putumayo, being increased by nearly ninety tributary streams; and they state that the church and ten houses have been reduced to ruins, and the remainder of the inhabitants have fled into a high mountain, with all the images which they were able to save from the wreck. Almost the whole of this Canton is overspread with large abysses, principally in the parish of Yacuanquer, where its numerous eruptions have fortunately not disturbed the course of the river Guitara.

The Churches of the Parishes Zuassuyes and Ipiales of the District of Tuquerres have been likewise overthrown; and there considerable chasms in the territory of Guachucal, but Divine Providence has graciously been pleased to preserve its inhabitants from other evils.

Motions of the earth are even still felt there, and its frightful growlings terrify us every instant, and the one as well as the other, are felt to proceed from that part of Mocoa, whence they seem to originate; but up to this moment I have had no account of that unfortunate people. The heat of the sun has been excessive and destructive of the crops, but it has moderated since morning, and rained heavily last night, which affords us much consolation, as it prognosticates approaching winter.

Hoping your Excellency will be pleased to communicate the above to the proper authority, may God preserve your Excellency many years.

THOMAS ESPANA.

CIRCULAR.

Colombia, State of New Granada, Home and Foreign Office, Bogota, February 11, 1834.

ON HIS EXCELLENCY

The Governor of the Province of —.

On the 20th of January last, at seven o'clock, in the morning, the City of Pasto had been converted into ruins in an instant, by a violent earthquake, followed up by continual motions of the earth, and occasional severe shocks, which were felt even to the eve of the 22nd at the moment of the departure of the last post. More than fifty dead bodies, and as many others in an expiring state have been already extracted in the rubbish on the remote outskirts of the city; and a nameless multitude of victims are altogether buried beneath the wreck. The infection of the air and the absolute state of destitution, being without clothes or food, to which those are reduced, who have survived this lamentable catastrophe, in a season of extraordinary heat by day, and most rigorous frosts by night, give menacing forebodings of an approaching plague. The desolating effects of the season, itself scorching up the crops or nipping them in their bud, threaten the surrounding country with a future famine. Similar scenes of misery and of death, have been exhibited amongst all the neighboring villages, and must also have taken place in the other towns of the Province, situated to the South, and which are of most importance, because the movement of the Earth has taken its origin and direction, from the Volcanoes of the Province of Imbabura in the State of the Equator, and it is known likewise that this Earthquake has destroyed the City of Almaguer, which is in the meridian of the City of Popayan.

To events of such dismal and affecting nature, neither the Government nor the inhabitants of New Granada can be insensible or indifferent.

The President has given for transmission by the Post which departs to-morrow morning, three thousand dollars, to relieve the first necessities of the loyal and Industrious PASTORIANS. But this scanty supply being disproportionate to the pressing wants of the survivors, I am directed hereby to request

your Excellency will solicit other greater and suitable contributions from the patriotism and philanthropy of the inhabitants of your Province, who, if persuaded, will not be deaf to the cries of afflicted humanity. In the following parts of the Province of Popayan, a subscription has been collected from the sufferers, to which almost all have contributed with a prompt and generous liberality: and Pasto will quickly re-ascend from its ruins, if all the other districts of the Republic but imitate this laudable example, in fulfilling a solemn and sacred duty.

LINO DE POBLO.

A GOOD STORY.—"One seldom hears a good story now-a-days: the following is not bad. A year or two ago there came to the Lion, at —, a pleasant-looking, bustling, great-coated, commercial-traveller sort of a body. 'Well, landlord, what have you got, rump steak, eh? oyster sauce, eh? bottle of sherry, good, eh? send 'em up.' Dinner was served, the wine despatched, and a glass of brandy and water comfortably settled the dinner.

'Waiter,' said the traveller, coolly and dispassionately wiping his mouth with a napkin, 'Waiter I am awkwardly situated.'

'Sir?' said the waiter, 'expecting a love-letter.'

'I cannot pay you.'

'Sorry for that, sir; I must call master.'—(Enter landlord.)

'My good sir, you see this is rather awkward—good dinner! capital! famous wine! glorious grog!—but no cash.'

The landlord looked black.

'Pay next time—often come this road—done nothing to-day—good house yours—a great deal in the bill way.'

The landlord looked blue.

'No difference to you, of course?—pleasant house here—plenty of business—happy to take your order—long credit—good bill.'

'There is my bill, sir—prompt payment—I pay as I go.'

'Ah, but I must go without paying. Let us see—bill 17s. 6d. let us have a pint of sherry together—make it up a pound—that will square it.'

'Sir, I say you are a swindler, sir!—I will have my money.'

'Sir, I tell you I will call and pay you in three weeks from this time exactly, for I shall have to pass this road again.'

'None of that, sir—it won't do with me—pay my money, or I'll kick you out.'

The stranger remonstrated—the landlord kicked him out.

'You will repent of this,' said he stranger.

The landlord did repent it. Three weeks after that day, punctual to his word the stranger re-entered the Lion Inn—the landlord looked very foolish—the stranger smiled, and held out his hand—'I've come to pay you my score, as I promised.'

The landlord made a thousand apologies for his rudeness—'So many swindlers about, there's no knowing whom to trust. Hoped the gentleman would pardon him. 'Never mind, landlord; but come, let's have some dinner together—let us be friends. What have you got, eh?—a couple of boiled fowls, eh?—nice little nam of your own curing? good!—greens from your own garden? famous!—bottle of sherry and two bottles of port—waiter, this is excellent.'

Dinner passed over—the landlord hobbled and nobbed with the stranger—they passed a pleasant afternoon. The landlord retired to attend to his avocations—the stranger finished his 'comforter' of brandy and water, and addressed the waiter—

'Waiter, what is to pay?'

'Two pounds ten shillings and threepence, sir, including the former account.'

'And half a crown for yourself?'

'Makes two pounds twelve shillings and ninepence, sir,' replied the waiter, rubbing his hands.

'Say two pounds thirteen shillings!' said the stranger, with a benevolent smile, 'and call in your master.'

(Enter landlord, smiling and hospitable.)—'Sorry you are going so soon, sir.'

'The stranger merely said, with a fierce look, 'I owed you seventeen and sixpence, three weeks ago, and you kicked me out of your house for it.'

The landlord began to apologize.

'No words, sir; I owed you seventeen and sixpence, and you kicked me out of your house for it. I told you you would be sorry for it. I now owe you two pounds thirteen shillings, (and quietly turning aside his coat-tail,) you must pay yourself by a check on the same bank; for I have no money now.—[Bell's Weekly Messenger.]

Cholera in the West.—The New Orleans *Rec.*, of the 24th ult. says: "The Cholera had broken out on board the steamer Philadelphia—She landed a detachment of U. S. troops at Montgomery's Point on Sunday morning, the commanding officer of which, stated to our informant that six of his corps had been attacked with the disease, one of whom had died; two others were supposed to be dangerous—There had been a few cases among the passengers of the boat, one of whom had died.—[Charleston Patriot.]

In our paper of yesterday morning, we stated that the "Etna" of H. B. Majesty's navy, had impressed two men from the American ship "Rosanna," of Boston, commanded by Capt. George H. Jennings, while lying in port Praya, St. Jago, although no other sailors could be obtained in that port. It may not therefore be amiss to state, that by a letter dated 17th Feb. ult. we learn that Capt. J. protested against him in the usual form: upon this the 1st lieutenant of the "Etna" challenged him to fight. On the American captain's offering the terms on which he would accept the challenge, namely, to fight across a table with pistols, the British officer declined.

The commander of the "Rosanna" was presented with a handsome silver set by his passengers, while lying in the said port, in testimony of their approval of his conduct during the voyage from Havana.—[Daily Adv.]

Texas.—This country is likely to be convulsed in civil war, in consequence of the imprisonment of Col. Austin, founder of Austin's colony. The Colonel is accused by the Mexican government of having excited the colony to insurrection, and driving away the Mexican troops. The Colonel is now undergoing his trial in the city of Mexico, and fears are entertained for his life. Should he be executed, his death will be revenged, and a civil war must be the result.—[N. O. Mer. Adv.]

List of Subscribers to the Railroad Journal who have paid in advance to Jan. 1, 1835, continued from April 19, 1834.

T. H. Rochester, Rochester, N. Y.
E. & J. A. Sehr, Philadelphia, Pa.
B. Woodward, Abbeville, Ohio
C. J. Blauvelt, Blauveltville, N. Y.
Jas. McCawley, Marksville, La.
P. G. Voorhies, Marksville, La.
J. W. Lincoln, Worcester, Mass.
A. B. Linton, Athens, Geo.
John Randall, Jr., Ithaca, N. Y.
G. T. Bedell, Philadelphia, Pa.

TOWNSEND & DUFFEE, of Palmyra, Manufacturers of Railroad Ropes, having removed their establishment to Hudson, under the name of *Duffee, May & Co.* offer to supply Ropes of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Ropes, the public are referred to J. B. Jarvis, Eng. M. & H. R. R. Co. Albany; or James Archibald, Engineer Hudson and Delaware Canal and Railroad Company, Carbon Dale, Luzerne county, Pennsylvania.
Hudson, Columbia county, New York, {
January 29, 1835.

RAILWAY IRON.

Ninety-five tons of 1 inch by 1/2 inch, Flat Bars in lengths of 14 to 16 feet counter sunk holes, end cut at an angle of 45 degrees with splitting plates, nails to suit.

240 do. of Edge Rails of 36 lbs. per yard, with the requisite chairs, keys and pins.
Wrought Iron Rims of 30, 33, and 36 inches diameter for Wheels of Railway Cars, and of 60 inches diameter for Locomotive wheels.

Axles of 2 1/2, 3, 3 1/2, 3 3/4, and 4 inches diameter for Railway Cars and Locomotives of patent iron.

The above will be sold free of duty, to State Governments and Incorporated Governments, and the Drawback taken in part payment.
A. & G. RALSTON,
9 South Front street, Philadelphia.

TO IRON MANUFACTURERS AND OWNERS OF IRON ORE BEDS.

JOSEPH GOULDING, of Keeseville, Essex county, N. Y., has invented and patented a *Magnetic Separating Machine*, for separating Iron Ore from the extraneous matter usually found in connection with it; and he begs leave to recommend it to the especial notice of owners of Ore Beds as possessing qualities of great importance, as by the use of this machine ore beds can be made very valuable, it being applicable in all cases when the Ore is magnetic.

The quality of the iron made is much improved by the process of separation, indeed good iron can, after separation, be made from ore which would without it be considered not worth working. There is also found to be a great saving in the transportation of ore, and in time and fuel required to work the same into iron.

Mechanics can be furnished at short notice which will separate from half a ton to twenty tons each in twenty-four hours.
J. Goulding also manufactures to order, *Cylindrical Forges and Blast Furnace Bolsters*, of the most improved construction, and which are successfully used in nearly all the Forges and Furnaces in Clinton and all the adjoining counties.
January 20th, 1834.

LOCOMOTIVE ENGINES.

THE AMERICAN STEAM CARRIAGE COMPANY, OF PHILADELPHIA, respectfully inform the public, and especially Railroad and Transportation Companies, that they have become sole proprietors of certain improvements in the construction of Locomotive Engines, and other railway carriages, secured to Col. Stephen H. Long, of the United States Engineers, by letters patent from the United States, and that they are prepared to execute any orders for the construction of Locomotive Engines, Tenders, &c. with which they may be favored, and pledge themselves to a punctual compliance with any engagements they may make in reference to this line of business.

They have already in their possession the requisite apparatus for the construction of three classes of engines, viz. engines weighing four, five, and six tons.

The engines made by them will be warranted to travel at the following rates of speed, viz. a six ton engine at a speed of 15 miles per hour; a five ton engine at a speed of 18 miles per hour; a four ton engine at a speed of 22 1/2 miles per hour. Their performance in other respects will be warranted to equal that of the best English engines of the same class, with respect not only to their efficiency in the conveyance of burthens, but to their durability, and the cheapness and facility of their repairs.

The engines will be adapted to the use of anthracite coal, blue wood, coke, or any other fuel hitherto used in locomotive engines.

The terms shall be quite as favorable, and even more moderate, than those on which engines of the same class can be procured from abroad.

All orders for engines, &c. and other communications in reference to the subject, will be addressed to the subscriber, in the city of Philadelphia, and shall receive prompt attention.

By order of the Company, **WILLIAM NORRIS**, Secretary.

December 2d, 1833.

For further information on this subject see No. 40, page 772 of this Journal.

RAILROAD TURNOUTS, REVOLVING PLATFORMS AND SIDELINGS.

The subscriber having been for some years engaged in constructing turnouts, and inserting the necessary switches and fixtures appertaining to the same, on the Baltimore and Ohio Railroad, and as those works on that road will be shortly completed, he is desirous of being employed by any Railroad Company requiring work of the above description.

He will either contract at a fixed price to execute the work, he providing all the necessary materials and fixtures, or otherwise,—or he will engage himself at a stated salary.

In relation to his abilities and general character he begs to refer any Company, disposed to engage him, to the Baltimore and Ohio Railroad Company.

Letters can be addressed to him at the Office of Construction Baltimore and Ohio Railroad, Baltimore.
a95 6t **REUBEN ALER.**

SURVEYORS' INSTRUMENTS.

Compasses of various sizes and of superior quality warranted.

Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by **E. & G. W. BLUNT**, 154 Water street, corner of Maidenlane.
J31 6t

ENGINEERING AND SURVEYING INSTRUMENTS.

The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely new: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy—also, a Railroad Goniometer, with two Telescopes—and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.
WM. J. YOUNG,
Mathematical Instrument Maker, No. 9 Dock street, Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.
Baltimore, 1832.

In reply to thy inquiries respecting the instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad. I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Gra-
duation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable.

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sights, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to later angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,
JAMES P. STABLER, Superintendent of Construction of Baltimore and Ohio Railroad.

Philadelphia, February, 1833.
Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors.
E. M. GILL, Civil Engineer.
Germantown, February, 1833.

For a year past I have used instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.
HENRY R. CAMPBELL, Eng. Philad.,
German and Norrist. Railroad

STEPHENSON,

Builder of a superior style of Passenger Cars for Railroads
No. 264 Elizabeth street, near Bloeker street,
New-York.

RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part of the New-York and Harlem Railroad, now in operation.
J35 15

RAILROAD CAR WHEELS, BOXES AND AND OTHER RAILROAD CASTINGS.

Also, AXLES furnished and fitted to wheels complete at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to. Also, CAR SPRINGS.

Also, Flange Tires turned complete.

ROGERS, KETCHUM & GROSVENOR.

NOVELTY WORKS,

Near Dry Dock, New-York.

THOMAS B. STILLMAN, Manufacturer of Steam Engines, Boilers, Railroad and Mill Work, Lathes, Presses, and other Machinery. Also, Dr. Nott's Patent Tubular Boilers, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited.
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INSTRUMENTS.

SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

EWING & HEARTZ, at the sign of the Quadrant, No. 53 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude.

For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewing & Hertz.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable. They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES P. STABLER,

Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' Instruments of your Manufacture, particularly Spirit Levels, and surveyor's Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

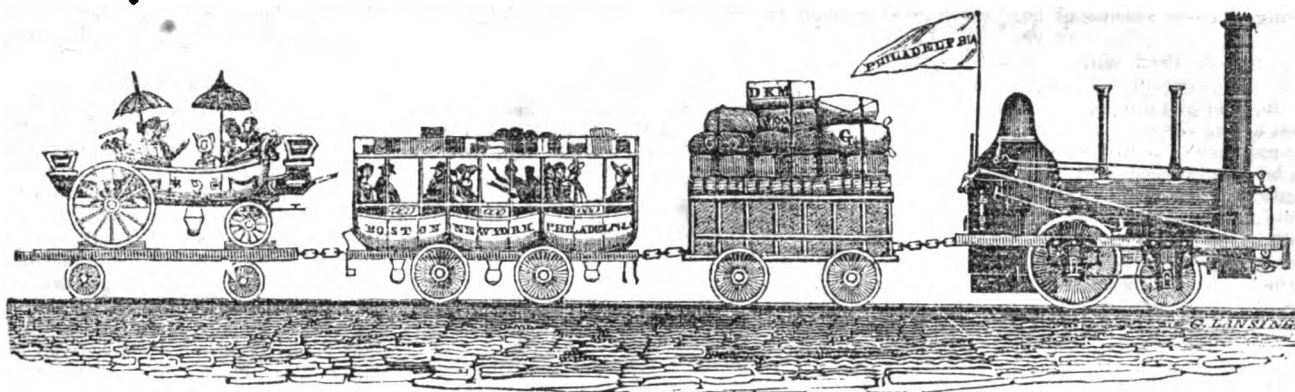
WILLIAM HOWARD, U. S. Civil Engineer.

Baltimore, May 1st, 1833.

To Messrs Ewing and Hertz.—As you have asked me to give my opinion of the merits of those instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming acquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprise so well merits, I remain, yours, &c.

E. H. LATROBE,
Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them, upon application, to any person desirous of perusing the same.
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AMERICAN RAILROAD JOURNAL, AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT No. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, Editor.]

SATURDAY, MAY 17, 1834.

[VOLUME III.—No. 19.]

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, MAY 17, 1834.

NEW-YORK AND ERIE RAILROAD.—We stated in our last that an appropriation had been made for a complete survey of this great work. We have since been informed, that the appropriation is only \$15,000, a sum much less than will be required to make a thorough survey. It is, however, sufficient to make a beginning, and we have no doubt but that an equal amount, or nearly so, will be subscribed by the owners of real estate in this city and along the line of the road.

An early survey of this route is highly important, and an early commencement of the work of equal importance to this city, quite as much so, indeed, as to the country through which it will pass; as Pennsylvania is pushing her works up to the State line, in order to intercept the trade of the southern counties; and she will not be disappointed either, unless New-York throws aside her sectional policy, and deals equally liberal with all parts of the State as she has with the northern section, and opens another outlet to her own markets, for the produce of her own soil. The southern tier of counties, or some parts of them, can obtain, (and have done it this season,) their supply of merchandise from New-York, or Philadelphia, through the Pennsylvania canals, several weeks before the ERIE CANAL was navigable. New-York can only counteract this by opening a more ready—an earlier communication, and this may be done by a railroad.

We shall give in our next a communication

handed to us, which has been before published in a different form, containing some very good reasons why the State should not only survey the route, but also contribute largely to its construction after it is surveyed.

Railroad from Tuscaloosa to Tusculumbia. To the Editor of the American Railroad Journal and Advocate of Internal Improvements.

North Port, Ala., April 25, 1834.

SIR,—Sometime in the fall of 1832, No. 36 of the Railroad Journal came into my hands. I am not absolutely certain that it is still published in New-York, though I am informed that it is. My object in writing at this time is, to request you to send me a Number of the Journal, if it is still published. On the receipt of it I will transmit to you the subscription price of one copy for one year, and perhaps more. The reason for my wishing to subscribe for the Railroad Journal is, that through the medium of it, to give publicity to the designs and wishes of so many of the people of this State who are anxious for a railroad between Tuscaloosa to Tusculumbia, a distance of about 100 miles, or a little over. It is not my intention to dilate on this subject at this time. It is sufficient, for the present, to mention, briefly, that in the event of the existence of this road, 100,000 bales of cotton, now raised in Tennessee valley, could get to market in going one-third the distance that it is now carried. The goods taken in exchange would return on the same road. There would then be a direct communication, by means of the Tennessee river, which runs nearly north from Tusculumbia into the Ohio, from Cincinnati and the immense country of the West, to Mobile, consequently, all the rope, bagging, twine, flour, bacon, potatoes, whiskey, and a variety of other articles, that now go the long route to New-Orleans, Mobile, and thence up our rivers, would come down the railroad to Tuscaloosa, and through the middle of Alabama to Mobile. The goods taken in exchange would return back on the road. Flour, bacon, and potatoes, on account of the delay in going to New-Orleans, and the hot weather, are frequently spoiled before arriving here. The great north and south travel is another important consideration; and also that the country through which this road would pass abounds in stone coal. Tuscaloosa is at the head of navigation, on the Black Warrior river. North Port is opposite the town of Tuscaloosa, on the other side of the river, and ships between 3 and 4000 bales of cotton annually.

Very respectfully, C. S.

A railroad from the Tusculumbia and Decatur Railroad to Tuscaloosa will add greatly to

the facilities and conveniences of business men in the interior of Alabama. We consider the projectors of the Tusculumbia, Courtland, and Decatur Railroad among the true benefactors of the State. That road, short as it is, will become the centre of action. It will, within a few years, be continued to the Atlantic on the east, the Mississippi on the west, the gulf of Mexico on the south, and the Ohio on the north; and will be intersected by numerous other shorter railroads from all the principal towns in their vicinity.

Newly Invented Railways. Communicated by the INVENTOR. To the Editor of the American Railroad Journal, and Advocate of Internal Improvements.

DEAR SIR,—I have now finished planting trees, for the present season at least, and snatch the first moment's time to fulfil the promise I have made you respecting my newly invented railways. I now give you a description, though an imperfect one, of this notable contrivance.

The supports of the railways are constructed out of common dock logs, which, in the first instance, are to be subjected to the operation of being well charred. Their butt ends are then to be inserted in the ground three or four feet deep, and surrounded by ruple stones well rammed in. The height of these supports will depend upon circumstances, from one hundred feet high down to not less than ten.

In order to give to these supports a due degree of stiffness and strength, I propose making the ways double, which will afford sufficient room to give them these properties. The spaces longitudinally between these supports, according to circumstances, may be occasionally extended to 500 feet, perhaps to a thousand. Whenever the extension is considerable, a sufficient number of lighter supports may be used. These may probably be made to give the necessary support without being inserted in the ground.

I shall now proceed to describe the mode of constructing the rails. In the first place, round iron, from a quarter to a half an inch in thickness, must be stretched across from pillar to pillar. These iron rods must be placed immediately under the rails—three to each rail. On these the rails are formed of common plank, extending the whole length, placed one on the top of the other, breaking joints. The whole number of the plank thus layed will depend on circumstances, perhaps 8 or 10 may prove sufficient. A proper cement must be used between each layer of the plank, to connect the whole into one solid mass. When the rails are thus formed,

a shoeing of some species of hard wood must be laid on, for the wheels to run on. These wheels must be tired with hard wood instead of iron. It is contemplated that, thus elevated above the dust and mud of common roads, they will last a long time.

The expense of a rail constructed as above would be small indeed when compared with the railroads now in use. It probably would not cost one-fourth of the latter, where iron is universally in use. But, independently of the difference of expense in the construction, as well as in the reparation of such a road, the advantages to be derived from its use are numerous and important. Its elevation not only protects it from dust, &c., but places it out of the reach of all interruptions, and permits also the passage across its path below of all sorts of other carriages in all directions. The farmer, instead of his usual dread of a railroad across his premises, will, on the contrary, court the approach of such a railroad as above described, as a great convenience in his various transportations, without incommoding him in any way. Whilst the railroad is passing over his head, he pursues his different agricultural avocations on the surface of the ground uninterrupted. The room the supports occupy is too trivial to be noticed; but another most important circumstance is, that it completely does away with all necessity of embankments and deep cuttings, leaving the ordinary surface of the ground free and clear; and, should the undulating project prove really advantageous, it would enjoy all the benefits arising from that source, exempted from all extra expense.

But there is one source of improvement which had nearly escaped my memory. The forward wheels, perhaps all the wheels, should have attached to each of them a wheel of a foot or 18 inches diameter, revolving horizontally, so placed that its periphery shall approach the inner side of the rails within half an inch, when the carriage is passing through the middle of the road, so as to prevent much deviation the reform whenever the wheels come in contact with either side of the rails. The mode now in use of preventing the carriage wheels from running off the ways is clumsy, and attended with much friction, so as to occasion considerable wear and tear. In order to prevent the carriage wheels from slipping on the ways, the periphery thereof should be covered with Indian rubber or leather made perfectly water tight.

Your obedient servant, J. S.

Hoboken, May 10, 1834.

The following Report of the Engineer to the President and Directors of the Tuscumbia, Courtland and Decatur Railroad Company will be found highly cheering to the friends of railroads, especially to those who look forward to the construction of a railroad from New-York through the Atlantic States to the Mississippi.

We also publish to-day two letters from gentlemen, one in Tennessee, and the other in Alabama, by which it will be seen that the Southern States are even taking the lead of the North.

Report of the Engineer to the President and Directors of the Tuscumbia, Courtland and Decatur Railroad Company.

Engineer's Office, Tuscumbia, March 4, 1834.

GENTLEMEN,—In presenting my second annual report, I have pleasure in stating that the different parts of the work have been steadily progressing; although not with that celerity and dispatch that was anticipated in our last annual exposition. The causes that have retarded the progress of the work are divers: the principal, however, may be attributed to the fact of the whole line being in the hands of one company of contractors.

Competition, it is acknowledged, in almost every pursuit, gives life to business, and had the work been let in smaller contracts, there is

reason to believe the whole would have been accomplished in due time.

LOCATION OF THE ROUTE.

At the date of the last annual report, it will be recollected, the location had then been established to a point on the East branch of Big Nance Creek, near Courtland. Since that time, and indeed quite lately, the line has been located to the termination on the Tennessee river, at the town of Decatur. The total length of the railroad, between its terminations on the Tennessee river, is 45.214 miles, viz.:

The Tuscumbia railway, extending from the depot on the Tennessee river to Maine street in Tuscumbia	2.100
1st division of the Tuscumbia, Courtland and Decatur railroad, from Main street in Tuscumbia to the West bank of Town Creek	14.784
2d division, from point last named to the East boundary of the town of Courtland	8.850
3d division, from Courtland to the termination at Decatur	19.480

Total in length, 45.214

The field work having only just been completed, no maps or profiles of the line can, at this time, be furnished; but these, as also the estimates upon the final location, will be made out and reported as soon as practicable.

I will merely remark that the limits and restrictions as to grade and curvature, which have heretofore been adopted, have been strictly obtained, viz.: 25 feet per mile as the maximum inclination, and 1,512 as the minimum radius of curvature.

There has been no curve laid on the first 13 miles of the road above Courtland on a less radius than 3,793 feet. One straight line has been obtained of a little over 4 miles, and another of $3\frac{1}{2}$ miles in length. The route, as now located, is the same in almost every particular described as letter A in my report upon the experimental surveys, above Courtland, submitted to your Board, 9th December last, a copy of which is herewith submitted, marked No. 1, for reference.

The general result of the estimates, as presented in the said report, will not, I apprehend, be materially changed upon the final estimates. The line, through the town of Courtland, has been located somewhat differently from what was anticipated when the report above referred to was presented. In order to comply with an arrangement made and agreed to by your Board, with the citizens of Courtland, it was found necessary to change the location as formerly made from station No. 296, being half a mile West of Big Nance, by curving to the right, and after crossing the public road, taking a direction for the street, through the centre of the public square in town, crossing the creek above the present bridge, at right angles with the stream. The principal disadvantage in this location is a high embankment, which has to be made immediately East of the creek. But it was deemed preferable to encounter this than the extra length of bridge that would have been required on the other route. The bridge will have one of its abutments on solid rock foundation and will be only a little over 100 feet long. The curves are also more agreeable, not being so sharp. Upon the other route, crossing below the road bridge, the bridge must have been 180 feet long, and located diagonally upon the stream.

An inclined plane is to be located in the town of Decatur, to overcome the difference of level between high water in the Tennessee river and the elevation of the Railroad. The grade of the road where the inclined plane commences is 25.41 feet above high water. The length of the inclined plane will be 330 feet, and its inclination 1 in 13.5, or say 4 degrees and 15 minutes.

This plane is designed to be worked by stationary horse power; the mode and manner of which will be best explained by reference to a

drawing heretofore furnished, relating to the depot and other buildings to be erected at Decatur.

THE GRADUATION.

At the date of the last annual report there had been $6\frac{1}{2}$ miles of the road graded above Tuscumbia. At this time the graduation may be said to be completed to station No. 178, on the second division, a distance of $19\frac{1}{2}$ miles, and about a mile more is graded a short distance West from Courtland; making say $20\frac{1}{2}$ miles of graduation accomplished. Deduct $6\frac{1}{2}$ and it leaves $12\frac{1}{2}$ miles done during the present year. It is to be remarked that much the heaviest portion of the whole line, in proportion to distance, has been finished. Contracts for the graduation of the whole line from Courtland to Decatur, except the first 3 miles above Courtland, were entered into, as your Board will remember, on the 16th day of January last, divided as follows, viz.: H. W. Rhodes, to extend 5 miles west from Decatur; Wm. Ellett, 1 mile west from Dr. Rhodes; Amos Kemble, the next 2 miles; A. & J. B. Hill, the next 4 miles; and Messrs. Combs and Dobbin, the next 4 miles. The first 8 miles extending from Decatur towards Courtland are taken at the estimate that shall be put upon the work by the engineer. The remainder, or the next 8 miles, at 11 cents per cubic yard, for excavation and embankment; and the grubbing, chopping and masonry, at the estimates to be fixed by the engineer. I am happy to state that three of the principal contractors commenced immediately after their engagement, with the company, and are progressing handsomely with their work. The grading from Big Nance to the Public Square in Courtland, was undertaken by Mr. Pearsoll, who has also commenced operations. The whole of the graduation is promised [by the contracts] to be accomplished by the 1st day of July next.

CONSTRUCTION.

Of this branch of the work there had only been one $\frac{1}{4}$ mile completed at the date of the last annual report, upon $2\frac{1}{2}$ miles the sleepers and strings had been laid, and upon a little over 2 miles, the sleepers only had been laid down.

At this time the construction may be said to be entirely completed to Town Creek, a distance of $14\frac{1}{2}$ miles above Tuscumbia, deducting $\frac{1}{4}$ mile, and it leaves $14\frac{1}{2}$ miles which have been finished during the past year. There remains now a distance of about $8\frac{1}{2}$ miles to be done to reach the town of Courtland, which it is expected will certainly be completed by the 1st day of July next. Contracts for the construction of the road above Courtland were also entered into, as your Board are aware—at Courtland, on the 16th of January last, viz.: with Dr. H. W. Rhodes, 5 miles, extending west from Decatur, the same ground of which he has the grading; Wm. Ellett, one mile, next to Dr. R.; Mr. Kemble, two next miles; Messrs. Pope & Thompson, four miles next to Mr. Kemble, and two miles extending from Big Nance Creek, eastwardly; Messrs. Combs and Dobbin have undertaken the next four miles, of which they have the grading; and Mr. S. Stevens has the balance, being about two miles.

The whole line is taken at the uniform price of \$2 13 $\frac{1}{4}$ per rod run, for the complete construction of the road, including the filling in of the horse-path of earth, and the covering of the ends of the sleepers.

Contracts for a sufficiency of timber of all kinds have also been entered into. Cedar sleepers at 30 cents per sleeper, and cedar strings at \$5 per 100 ft., oak at \$4 50; all to be delivered upon the line, at the proper points, by the 1st June next. The complete construction of the road is promised in the contracts by the 1st day of October next.

There has been delivered and received upon the line of railroad [including all above Tuscumbia] as appears from the inspector's reports, 28,235 cedar sleepers, 233 mulberry ditto, 56,410 feet cedar string pieces, 116,414 feet oak ditto, 12,632 feet poplar ditto, 11,880 feet mixed parcels oak and poplar.

There has been imported from Liverpool, and landed at the company's depot, 18,898 bars of railroad iron, weighing 929,562 pounds, being about a sufficiency to make 26½ miles of single track of railroad. There has also been received in all, from the Troy iron and nail factory, New-York, 37,696 lbs. of spikes and joint plates; castings for four complete turnouts have been obtained from Nappier's works in Tennessee.

An order for the necessary quantity of iron, spikes, and end plates, which will be required for the completion of the railroad, was made out and forwarded in December last.

DEPOTS, &c.

The depot and inclined plane at the termination of the Tusculumbia railway was nearly completed at the date of the last annual report, and was soon after finished, but it was feared that a want of sufficient room would be felt when the business season should arrive. With a view of obviating any difficulties on this head, several plans for the enlargement of the warehouse were suggested and discussed, and finally it was concluded to build storage rooms for cotton alone, immediately below the warehouse; and accordingly a building of frame, underpinned with rock, has been erected, 60 by 60 feet, and although measures were taken in due time, as was supposed, for the accomplishment of this business, I am sorry to say, the said building is not even now entirely completed, and, as must readily be seen, much inconvenience, and even actual damage, has been sustained in consequence thereof.

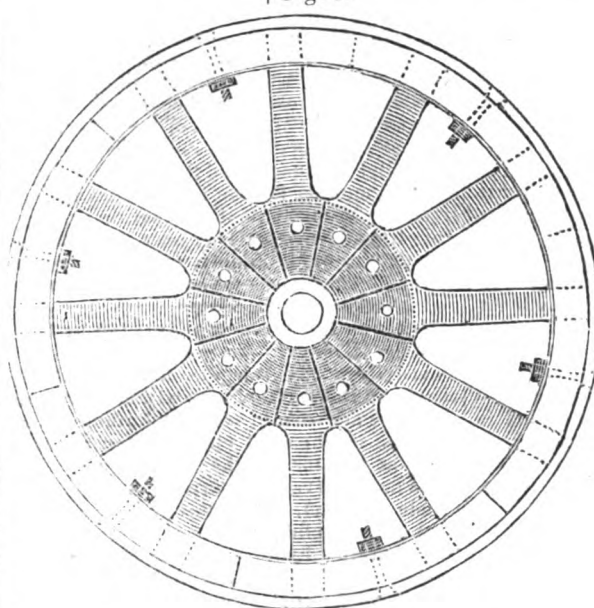
It is also true, that had the said building been entirely completed, there would still have been a deficiency in room for the storage of cotton, as well as for goods, even the present year, limited as the business of the road is, compared with what it must be another year, or when the road shall have been completed to Decatur. In view, therefore, of the entire accomplishment of the road, during the present year, and in order to meet the immense business that must offer itself to the company the next season, and with a determination to give satisfaction to the patrons of the road, it has been determined by a committee appointed by your Board, that a considerable enlargement of the depot is indispensable, and that the engineer furnish plans and specifications, and advertise for proposals for the building of the same. Accordingly, an advertisement has been made, soliciting proposals until the 24th of the present month, for the building of a permanent wharf, 250 feet long, upon which will be erected a frame warehouse, of the same length, by 60 feet in width, also the extension of the present depot 75 feet at the east end, and the full width of the said house. Those buildings being erected, it is believed business will be done with economy and credit to the company, and entire satisfaction to the community. The sheds in the town of Tusculumbia remain as they were this time last year. The company has lately purchased three lots of half an acre each, contiguous to the railroad, and very near the business part of the town; which lots are designed to be occupied by the warehouse, sheds and offices, that will be needed in the plan.

[To be continued.]

FORCE OF TRACTION.—Experiments, in every way show, that the force of traction is uniform, nearly in an exact proportion to the strength and hardness of a road. The following are the results: On a well made pavement, the power required to draw a wagon is 33 lbs.; on a road made with six inches of broken stone of great hardness, laid on a foundation of large stones, set in the form of a pavement, is 46 lbs.; on a road made with a thick coating of broken stone, laid on earth, the power required is 65 lbs.; and on a road made with a thick coating of gravel, laid on earth, the power required is 147 lbs. Thus it appears that the results of actual experiments fully correspond with those deduced from the laws of science.—[Parnell's Treatise on Roads.]

HANCOCK'S WEDGE WHEELS.

Fig. 1.



Hancock's Wedge Wheels. [From the London Mechanics' Magazine.]

SIR,—I forward you a sketch and description of the wedge wheels which I have adopted for my steam carriages, having found those of other constructions insufficient for the purpose. Being desirous of employing vertical wheels, and knowing that those on the common plan could not stand in this position, I determined on trying a pair constructed in the manner I am about to describe, and which description I am induced to send you, from a belief they may be found useful generally, and more particularly to those who are engaged in similar pursuits with myself.

Fig. 1 is a front view of a wheel, with the front bindplate removed, to show the meeting of the wedged spokes, which are of straight grained, well seasoned ash, tenoned into the felloes as in common wheels, but the nave ends are very accurately fitted to each other in radial joints, butting against the iron box of the axle, and forming around it, to the circumference of the bind-plate (shown by a dotted circle), a solid connection of timber.

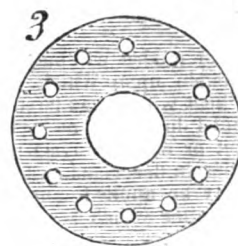
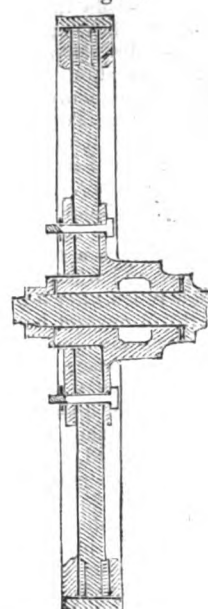
Fig. 2 is a horizontal central section of the above. The tire is secured by a bolt and nut, or rivets, through each felloe, the heads being countersunk, so as to stand flush with the outside of the tire. The box, which contains a reservoir for oil, is formed with its flange in one casting, the outside diameter of the flange being the same as that of the front bind-plate, which is like a large wrought iron washer, and shown detached at fig. 3.

Screw bolts pass through the back flange, spokes, and front bindplate, the nuts turning against the face of which brace all together as one solid nave. There is one of these bolts to each spoke, as shown in figs. 1 and 3.

The spokes throughout are of a parallel thickness, as shown in fig. 2, the edges being slightly rounded off.

I have not entered into the details of the substance of metal and wood, as this must necessarily depend upon the size of the wheel, as well as the work it is required to perform. Having worked many such wheels on my carriages, I can say, from experience,

Fig. 2.



that they are all that can be required in a wheel; they combine permanent strength with comparative lightness, and are by no means expensive in their first cost.

I am, sir, yours, &c.

WALTER HANCOCK.

Stratford, Essex, January, 1834.

P. S.—The Infant has a set of dished wheels on this principle, now in good condition, after having performed work which would have worn out two or three sets of wheels of the common construction.

Specification of a Patent for Furnaces for Generating Heat by Friction, and applying the same to economical purposes. Granted to JOHN W. COCHRAN, Lowell, Middlesex county, Massachusetts, November 19, 1834.

To all whom it may concern, be it known, that I, John W. Cochran, of Lowell, in the county of Middlesex, and state of Massachusetts, have invented a *Friction Furnace* for generating heat without the consumption of fuel, and applying the same to economical purposes; and I do hereby declare that the following is a full and exact description of my said invention.

Although the fact that heat may be generated by friction is one of universal notoriety, it does not appear that the idea of applying this heat to economical purposes has ever been practically acted upon; I, however, have ascertained by satisfactory experiments that it may be done to great advantage. The most convenient way of effecting the object is to prepare two metallic disks, or cylinders, say of cast iron, in the form of common mill stones, and to cause one of them to revolve against the other, under considerable pressure, which pressure may be given by the weight of one of the disks, or by that of a vessel containing water, or other fluid, to be heated, the bottom of which may take the place of one of the disks; or by weighted levers, or in any other way of producing pressure which may be preferred. When I make two

disks of this description to rub against each other, I form one or both of them somewhat hollow towards the centre, on the touching sides, as a bearing on that part would tend to diminish the friction towards the periphery, where the motion is the most rapid.

There are many ways in which I contemplate the application of this principle, as, for example, I intend sometimes to cause two disks, such as I have described, to revolve one against the other, by power derived from a water wheel, or from any other convenient source, and to enclose them within a drum, or chamber, into which a current of cold air shall be admitted, and whence it shall be conducted by suitable tubes, after it has been heated by being brought in contact with the disks; thus using it to warm the apartments of any building, or for other purposes. Where steam is preferred, I intend sometimes to allow water to fall in a small stream upon the heated disks, and to conduct it thence through tubes to wherever it may be required. Where steam is to be generated to drive machinery, the bottom of the boiler may be made of suitable form, and to bear upon a disk revolving below it; or the bottom may be perforated, to allow the shaft of a disk revolving in the inside thereof to pass through, and to be turned by any suitable apparatus, by power derived from the steam generated by the heat from the friction, or from any other source.

These various modes will sufficiently illustrate the principle upon which I depend for rendering the heat which was latent, sensible, and active; but I do not intend by this enunciation to restrict or confine myself to the form of apparatus herein described, or to the objects to which it may be applied, but to vary the same in any manner which I may find most convenient and efficient.

It may at first appear that the powerful friction necessary to engender sufficient heat to be usefully employed as a substitute for that extricated in the combustion of fuel, will produce a rapid wearing out and destruction of the rubbing apparatus; I, however, have ascertained, satisfactorily, that when the metals become heated, there is a degree of repulsion produced between them which admits of but little abrasion of their substance.

What I claim as my invention, and for which I ask a patent, is the application of the heat generated by the friction of pieces of metal against each other, to the purpose of heating air, generating steam, and, in fine, to all the economical purposes to which such heat is applicable, proceeding, in its production, upon the principles herein before set forth. JOHN W. COCHRAN.

Railroad from Memphis to Bolivar.—Extract of a letter, dated Memphis, Ten., April 22, 1834, addressed to the Editor of the Railroad Journal, &c.

"SIR,—I am now engaged in the preliminary survey of a railroad from Memphis, through Summerville, to Bolivar. It is intended to connect this with Jackson, and thence to Columbia, and thence probably to Nashville. Probably, in a few years, Nashville will be connected to Louisville on the Ohio River. Casting your eye on a map of Tennessee and Kentucky, you will see the extent of such a railroad. We strongly anticipate a connection with Charleston via Tusculum. Numbers in this place wish to take your Journal. I hope to send you something more substantial than words when next I write.

"Very respectfully,

"JOHN THOMPSON."

The writer of the above has our best wishes for his success, as well in his survey as in obtaining subscribers to the Journal.

THE IRON STEAMBOAT ALBURKHA.—This vessel is now in the river Niger, with the Quorra steamboat, and seems to have been the favorite of the two vessels since they departed on

their interesting expedition. The advantages of iron vessels in warm climates are ably pointed out in a short extract we gave in our last number from Chambers' Journal; and these advantages seem in no wise exaggerated in the instance of the Alburkha, according to reports received from those embarked in her. This vessel was built by Mr. Laird, of Liverpool, for the purpose of navigating the shoal water of the river, and we understand that he has since constructed another for the interior navigation of Ireland. We have no doubt that these vessels, from their vast superiority over those of wood, and their durable quality, will speedily be numerous employed.—[Nautical Magazine.]

NEITHER LIGHTING NOR HEATING BY GAS OF MODERN ORIGIN.*—In several situations removed from any volcanic action, so far as is visible on the surface, natural jets of inflammable gases are seen to issue, affording decisive evidence of chemical changes that are taking place at various depths beneath. Of these, some have served the purpose of the priest to delude mankind, while part of the others have been more usefully employed.

Carburetted hydrogen gas is well known to be the "fire-damp" of the coal districts, and to issue from the coal strata; collecting in the ill-ventilated galleries of collieries, and, when sufficiently mixed with atmospheric air, exploding with great violence when approached incautiously with an unprotected flame, spreading mourning and misery among the families of the miners. If the genius of Davy had merely produced his safety lamp, it would alone have united him to the applause and thanks of mankind.

As carburetted hydrogen is so freely liberated in coal mines, it would be expected that it should occasionally be detected on the surface, and accordingly it has been so discovered.* Inflammable gas also occurs in other situations, where there is no reason to suspect the presence of coal strata. Of this the well-known jets of gas in the limestone and serpentine district of the Pietra Mala, between Bologna and Florence, afford an example.

Captain Beaufort describes an ignited jet of inflammable gas, named the Yanar, near Deliktash, on the coast of Karamania, which perhaps once figured in some religious rites. He states that, "in the inner corner of a ruined building, the wall is undermined so as to leave an aperture of about three feet in diameter, and shaped like the mouth of an oven; from hence the flame issues, giving out an intense heat, yet producing no smoke on the wall." Though the wall was scarcely discolored, small lumps of caked soot were formed in the neck of the opening. The hill is composed of crumbly serpentine and loose blocks of limestone. A short distance down the hill there is another aperture, which, from its appearance, seems once to have given out a similar discharge of gas. The Yanar is supposed to be very ancient, and is possibly the jet described by Pliny.

Colonel Rooke informed Captain Beaufort, that high upon the western mountain at Samos there was an intermittent flame of the same kind; and Major Rennel stated, that a natural jet of inflammable gas, inclosed in a temple at Chittagong, in Bengal, is made use of by the priests, who even cooked with it.

According to M. Imbert, gaseous exhalations are employed at Thsee-Lieon-Tsing, in China, to distil saline water, obtained from wells in the neighborhood. Bamboo pipes carry the gas from the spring to the place where it is to be consumed. These tubes are terminated by a tube of pipe clay, to prevent their being burnt. A single well (of gas) heats more than three hundred kettles. The fire thus produced is ex-

* From Mr. De la Beche's Geological Manual (third edition, considerably enlarged in 1833), one of the most instructive and entertaining works which the new and important science of geology has yet produced.—Ed. M. M.

It appears very remarkable, that in the coal districts of the British isles, where such a large amount of carburetted hydrogen is annually produced, means have not been adopted for making an economical use of this gas, both as it respects light and heat.

ceedingly brisk, and the caldrons are rendered useless in a few months. Other bamboos conduct the gas intended for lighting the streets and great rooms or kitchens.

M. Klaproth notices other jets of inflammable gas in China; one, now extinguished, is stated to have burnt from the second to the thirteenth century of our era.

It also appears that M. Røeders, inspector of the salt mines of Gottésagabe, at Reine, in the country of Tecklenberg, has for two or three years used an inflammable gas, which issues from these mines not only as a light, but for all the purposes of cookery. He obtains it from the pits that have been abandoned, and conveys it by pipes to his house. From one pit alone a continuous stream of this gas has issued for sixty years. It is supposed to consist of carburetted hydrogen and olefant gas.

Inflammable gases are also found to proceed from ground charged with petroleum and naphtha. The inhabitants of Baku, a port on the Caspian Sea, are supplied with no other fuel than that derived from the petroleum and naphtha, with which the earth in the neighborhood is strongly impregnated. About ten miles to the north-east of this town there are many old temples of Guebres, in each of which there is a jet of inflammable gas rising from apertures in the earth. The flame is pale and clear, and smells strongly of sulphur. Another and a larger jet issues from the side of a hill. If, in the circumference of two miles, holes be made in the earth, gas immediately issues, and inflames when a torch is applied. The inhabitants place hollow canes into the ground, to convey the gas upwards, when it is employed for the purposes of cookery, as well as for light.

REMARKS ON THE GYPSIES.—There are few questions in the history of the human species more curious than that of the origin and characters of these singular people. A race of men which presents the most extraordinary phenomenon in social life, has existed nearly four centuries in Europe; and yet remains but imperfectly known. Neither time, climate, politics, nor example, have produced any change in their institutions, their manners, their language, or their religious ideas. The Israelites are the only people, who have preserved, like them, their primitive character in foreign lands.*

Different writers have assigned to these people a very different origin—one traces them from the eastern part of Tunis—another from Zanguebar—one from Mount Caucasus—one considers them as German Jews—and others bring them from Egypt, Colchos, the Ukraine, &c.

We know of but three writers who have placed this question in a true point of view. The two first whose opinions are admitted by the learned generally, are Grellman and David Richardson, who consider India as the cradle of Tzengoris or Gypsies; Abbe Dubois places them among the Kouravers of

* Names by which they are known in the different countries in which they reside.—The Arabs and Moors call them Harami, (robbers); the Hungarians Cingany, and Pharaoh Nepek (people of Pharaoh); the latter name is also given them in Transylvania; the English have adopted the name of Gypsies, an alteration of the word Egyptians; the Scotch, that of Caird; the Spanish call them Gitanos; the Portuguese, Ciganos; the Dutch, Heidenen, (idolators); the Russians, Tzengani; the Italians, Zingari; the Swedes, Spakaring; the Danish and Norwegians, Tatars; the Wallachians, Bessarabians, Moldavians, Servians and Sclavonians, Cigani; the Germans, Zigeuner; in France they at first received the name of Egyptians and more recently that of Bohemians, because the earliest of the tribe came into France from Bohemia. Historians of the middle ages designate them by the name of Azinghans, the modern Greeks under that of Atinghans; in Adzerbaidjan, they are called Hindou Karuch, (black Hindoos); in Persia, Louri; the Bucharians and inhabitants of Turkistan, call them Tziaghi, which appears to be the root of Tehingeni, the term given by the Turks to this wandering race. I have been acquainted in Europe with three of their Rabers of chiefs, who assure me they call themselves Rouma Chal.—These two words belong to the Mahratta language and signify men who wander in the plains. I consider Tzengarie as their primitive name, and which is still preserved in their mother country.

Mohissoun, while others trace them to the country of the Maharrattas as their original position where, indeed, they are still found united in tribes.

The Primitive tribes of the Tzengaris is a subdivision of the different tribes of Parias or men out of caste. The origin of Parias is very ancient. This sub-caste is formed by the union of individuals driven from different castes for offences committed against the religion and laws, and includes a great number of tribes, among whom may be reckoned Vallouvers the Chakalis, the Moutchiers, &c., and lastly the Tzengaris, the primitive tribe of our Bohemians and Egyptians, or the Zingari of the nations, which term still resembles the original name.

The tribe of Tzengaris, called also Vangaris on the coast of Concan and of Malabar, is nomadic.—They are often met in whole bands near the ancient and magnificent city of Visapour, and in the vicinity of Bangalore and Mahicour, which is called Mysore, from a habit of disfiguring eastern names. They are in general a dark complexion, which justifies the Persian appellation of Black Hindoos. Their religion, institutions, manners, and language differ from those of other tribes of Hindoos. During a war they are addicted to pillage, carry provision for the armies, and fill them with spies and dancers. During peace they make coarse stuffs, and deal in rice, butter, salt and opium, &c. Their women are as handsome and agreeable as the generality of Hindoos, but are very lascivious. They often carry off young girls whom they sell to natives and Europeans. They are accused of immolating human victims to their demons and eating human flesh. They every where follow the trade of errand runners and procurers.—The women are fortune-tellers, a business which they practice by striking on a drum in order to invoke the demon; then pronouncing with the air of a sybil, and with rare volubility, a string of mystical words, and after having gazed at the sky and examined the lineaments of the hand of the person who consults them, they gravely predict the good or evil which is to be his destiny. The women also practise tattooing, and the figures of stars, flowers, animals, &c. which they imprint upon the skin by puncturation and vegetable juices, are ineffaceable. They live in families, and it is not rare to see father and daughter, and uncle and niece, brother and sister, living like beasts together. They are suspicious, liars, gamblers, drunkards, cowards, poltroons, and altogether illiterate; they despise religion, and have no other creed than the fear of evil genii and of fatality. They originated in the province of Mahrat, among the eastern Ghauts.

The celebrated Cherif Eddin assures us that Timur sullied his conquests by the massacre of 100,000 prisoners, Persians, and Hindoos. The Monguls spread such terror in all parts of India, that great numbers abandoned that unhappy country.—The Hindoos of the three first castes, indeed, remained firm to their country;—their religion made it a duty;—but no place could retain the Soudras and Parias. They are such vagabonds that travelers have met with them in Abyssinia, in Arabia, at Tzouakem in the Persian Gulf, at Penang, at Singapore, at Malacca, at Manila, at Celebes, at Anyer, and even in China.

It is not natural to believe that the Tzengaris, who are so accustomed to a camp life, and excluded from Hindoo communion, should practise, or feign to practise, religion which offered them so many advantages, that they should act as spies and purveyors to the Mongul armies, and that a portion of them should accompany Timur in his long traverse through Kandahar, Persia, and Burkahra; and after passing through the Caucasian regions, and leaving behind them a train of detached families, they should have come to a stand, some in Russia, others in Asia Minor; that a second column should have passed from Kandahar into Mekran and Irak Arabia; and a third stayed into Syria, Palestine, and Arabia Petrea, and should have reached Egypt by the Isthmus of Suez, and thence should have passed into Mauritania.

It is not improbable that those rude travelers landed from the Black Sea and Asia Minor in Europe, by the intervention of the Turks during their wars with the Greek empire; and it is equally probable that the first of them who came to Europe, sojourned in European Turkey, as Aventine informs us, and proceeded thence to Wallachia and Moldavia. In 1714, they were found in Hungary, and at the conclusion of that year they were seen in Germany and Bohemia; the next year in Switzerland, and in 1422 in Italy. Pasquier carries their origin in France to 1417, and says that they styled themselves Christians from Lower Egypt, expelled thence by the Saracens, but that in reality they came from Bohemia. From

France they passed into Spain and Portugal, and afterwards under Henry VIII. into England. Their hordes commonly consist of two or three hundred persons of both sexes.

Although it is difficult to explain how they acquired the name of Gypsies or Egyptians, it is certain they neither have an Egyptian origin, nor came from Egypt to Europe, as Crantz and Munster have proved.

Countries in which the Tzengaris or Gypsies are now found.—These people constitute part of the population of all the countries of Europe and of a large portion of Asia. In Africa they are found only in Egypt, Nubia, Abyssinia, Soudan and Barbary.—They have never appeared in America.

They are most numerous in Spain, Ireland, Turkey and Hungary, but especially in Transylvania, Moldavia, Wallachia, Slavonia, Courland, Lithuania, and the Caucasian provinces.

In England they are still pretty numerous, but are found only in distant places, seldom coming into the towns excepting in small companies of two or three persons. In Germany, Sweden, and Denmark, they have become rare, as also in Switzerland and the Low Countries. In Italy their numbers are diminished. In Spain it is said that there are fifty or sixty thousand of them, and in Hungary, according to the best information, about fifty thousand. In Transylvania, they are most numerous, for in a population of 1,720,000 souls, there are reckoned 104,000 Tzengaris. We do not exaggerate in estimating the Tzengarian or Gypsey population of Europe at nearly a million: in Africa, at 400,000; in India, at 1,500,000; and about 2,000,000 in all the rest of Asia, for except in Asiatic Russia, China, Siam, Annam and Japan, they are every where to be found. Hence we may deem the total population of these people to be five millions.

We have thus a considerable portion of the human race thrown, as it were, beyond the common rights of nations; so many men wandering about without any claims which can attach them to the soil, encamping in places remote from civilization, living by theft and deception, and every where diffused, notwithstanding the persecution and contempt which are heaped upon them.—G. Louis Domyer De Rienzi.

From a Life of Sir John Moore, by his brother recently published in London, the following extract, descriptive of the close of the battle of Corunna, and the death of Moore, is made:

"Moore then turned to where the 59th regiment, commanded by Majors Charles Napier and Stanhope, was warmly engaged. They leaped over an enclosure, and charged the enemy, Moore exclaiming, 'Well done, the fiftieth! well done, my majors!'—The French were driven out of the village of Elvina with great slaughter; but Major Stanhope was killed, and Major Napier, advancing too far, was wounded and made prisoner. The contiguous regiment was the 42d, to whom Moore called loudly, 'Highlanders! remember Egypt!' They heard his voice, and rushed forward, bearing down every thing before them, until stopped by a wall, over which they poured their shot. He accompanied them in this charge, and told the soldiers he was well pleased with their conduct. Then he sent Captain Hardinge to order up the guards to the left of the Highlanders. This order was misunderstood by the captain of the Highland light company, whose ammunition, from being early engaged, was expended. He conceived that the guards were to relieve his men, and was withdrawing them, when the general, apprized of the mistake, rectified it, by saying, 'My brave 42d, join your comrades; ammunition is coming, and you still have your bayonets!' They instantly obeyed. The French having brought up reserves, the battle raged fiercely—fire flashing amidst the smoke, and shot flying from the adverse guns; when Hardinge rode up and reported that the guards were coming quickly. As he spoke, Sir John Moore was struck to the ground by a cannon-ball, which lacerated his left shoulder and chest. He had half-raised himself, when Hardinge, having dismounted, caught his hand, and the general grasped his strongly, and gazed with anxiety at the Highlanders, who were fighting courageously; and when Hardinge said, 'they are advancing,' his countenance lightened. Colonel Graham now came up, and imagined, from the composure of the general's features, that he had only fallen accidentally, until he saw blood swelling from his wound. Shocked at the sight, he rode off for surgeons. Hardinge tried in vain to stop the effusion of blood with his sash; then, by the help of some Highlanders and guardsmen, he placed the general upon a blanket.—

In lifting him, his sword became entangled, and Hardinge endeavoured to unbuckle the belt to take it off, when he said with soldierly feelings, 'It is as well as it is: I had rather it should go out of the field with me.' His serenity was so striking, that Hardinge began to hope the wound was not mortal; he expressed this opinion, and said, that he trusted the surgeons would confirm it, and that he would still be spared to them. Sir John turned his head, and cast his eyes steadily on the wounded part, and then replied, 'No, Hardinge: I feel that to be impossible. You need not go with me; report to General Hope that I am wounded and carried to the rear.' He was then raised from the ground by a Highland sergeant and three soldiers, and slowly conveyed towards Corunna.

The soldiers had not carried Sir John Moore far, when two surgeons came running to his aid. They had been employed in dressing the shattered arm of Sir David Baird, who, hearing of the disaster which had occurred to the commander, generously ordered them to desist, and hasten to give him help. But Moore, who was bleeding fast, said to them, 'You can be of no service to me: go to the wounded soldiers, to whom you may be useful; and he ordered the bearers to move on. But as they proceeded, he repeatedly made them turn round to view the battle, and to listen to the firing; the sound of which, becoming gradually fainter, indicated that the French were retreating. Before he reached Corunna it was almost dark, and Col. Anderson met him; who, seeing his general borne from the field of battle for the third and last time, and steeped in blood, became speechless with anguish. Moore pressed his hand, and said in a low tone, 'Anderson, do not leave me. As he was carried into the house, his faithful servant, Francois, came out, and stood aghast with horror; but his master, to console him, said, smiling, 'My friend, this is nothing.' He was then placed on a mattress on the floor, and supported by Anderson, who had saved his life at St. Lucia; and some of the gentlemen of his staff came into the room by turns. He asked each, as they entered, if the French were beaten, and was answered affirmatively. They stood around; the pain of his wound became excessive, and deadly paleness overspread his fine features; yet, with unshaken fortitude, he said, at intervals, 'Anderson, you know that I have always wished to die this way.—I hope the people of England will be satisfied! I hope my country will do me justice! Anderson, you will see my friends as soon as you can. Tell them—every thing.—Say to my mother—' Here his voice faltered; he became excessively agitated, and not being able to proceed, changed the subject. 'Hope!—Hope! I have much to say to him—but cannot get it out. Are Colonel Graham and all my aides-de-camp safe?' (At this question, Anderson, who knew the warm regard of the general towards the officers of his staff, made a private sign not to mention that Captain Burrard was mortally wounded.) He then continued, 'I have made my will, and have remembered my servants. Colborne has my will, and all my papers. As he spoke these words, Major Colborne, his military secretary, entered the room. He addressed him with his wonted kindness; then, turning to Anderson, said, 'Remember you go to Willoughby Gordon, and tell him it is my request, and that I expect he will give a lieutenant-colonelcy to Major Colborne;—he has been long with me—and I know him to be most worthy of it.' He then asked the major, who had come last from the field, 'Have the French been beaten?' He assured him they had on every point. 'It's a great satisfaction,' he said, 'for me to know that we have beat the French. Is Paget in the room?' On being told he was not, he resumed, 'Remember me to him; he is a fine fellow.' 'Though visibly sinking, he then said, 'I feel myself so strong, I fear I shall be long dying. It's great uneasiness—it's great, great pain!—Every thing Francois says is right—I have great confidence in him.' He thanked the surgeons for their attendance. Then seeing Captains Percy and Stanhope, two of his aides-de-camp, enter, he spoke to them kindly, and repeated to them the question, 'If all his aides-de-camp were safe; and was pleased on being told they were. After a pause, Stanhope caught his eye, and said to him, 'Stanhope! remember me to your sister.' He then became silent. Death, undreaded, approached; and the spirit departed, leaving the bleeding body an oblation offered up to his country."

TO TAKE OUT INK FROM MAHOGANY.—Wet a piece of blotting paper, rolled into a ball, and rub the places where the ink was with a dry cloth.

[From the *Mechanics' Magazine*.]

NEW ERA OF STEAM POWER.—Mr. BURDEN is progressing rapidly in the construction of his boat; it will be in operation on or before the first of June, and we have no doubt will realize the most sanguine expectations of the inventor—if inventor we dare call him, for, as will be perceived from the annexed communications, there are several who set up a previous claim. But, as a contemporary well observes,—“Other men broke stones before MACADAM, but he broke them to such effect as to be justly deemed an inventor. Other men, in like manner, may have observed the extreme buoyancy of the barrel before Mr. Burden; but the successful application of these principles we do think should entitle Mr. Burden to the title of inventor.”

We have received the following from Mr. HARRIS, in reply to ARCHIMEDES, published in our last number.

NORFOLK, Va., April 12, 1834.

SIR,—I have read with no little amusement, in your last number, a communication relative to my Twin Boat, by a writer who signs himself ARCHIMEDES. As he manifests a very laudable desire to prevent people from being “imposed upon by plausible appearances,” I have been induced to present for his consideration, through the medium of your valuable journal, some few facts and views which I have no doubt will disperse from his mind the mists of error by which he now appears to be so completely and unconsciously enveloped, and enable him hereafter to direct with the confidence of truth the patronage of “persons possessing both the means and disposition” to patronise valuable improvements. As in my letter, published in your last number, I have publicly condemned Mr. Burden's boat, I deem it proper to state here that I did not intend that letter for the public. Had that been my purpose I should have made no particular allusion to Mr. Burden's boat, but should have left the public to make their own comparisons. I would not be understood as condemning that letter on account of such particular allusion, (for the publication of Mr. B.'s invention made it a fair subject of public discussion, however rigid,) but merely as intimating that, having no wish to make strictures publicly on any man's concerns, and especially to commence a discussion, I should have been for that reason unwilling to have singled out Mr. Burden's invention, as if for the purpose, it would seem, of inviting controversy. My agent, to whom, and for whom alone, I intended that letter, not knowing my sentiments on this subject, judged that, as an advertisement of my invention, that letter would serve a good purpose, and on that account, and not with a view to the injury of Mr. Burden, published it, being perfectly justified in the act by the general principle, that whoever voluntarily introduces his opinions, conduct, or concerns, to public notice, renders them ipso facto justly amenable to public discussion, and in that sense public property, respecting which any man possesses the indubitable right of expressing his opinions, temperately, whether adverse or otherwise. As that letter is published, and as the remarks of ARCHIMEDES call for a reply, I am now, of course, compelled to sustain, as well as I may, by all fair means, my unfavorable opinions of Mr. Burden's invention, which I shall do, entertaining not the least personal hostility against that gentleman, with whom, in fact, I am unacquainted and whom I never saw. If Mr. Burden's plan of constructing twin boats is superior to any yet discovered, ARCHIMEDES may rest assured that a comparison of it with mine will redound to the advantage only of Mr. B.

ARCHIMEDES denies to me the merit of invention, because it appears that a Mr. Simon Fairman, in 1817, at Middletown, in Connecticut,

made a very “wonderful discovery” of what was, all persons must allow, according to ARCHIMEDES' statement, a “wonderful” boat indeed. This boat of Mr. Fairman's, only 35 feet long, was, it appears, sufficiently buoyant to carry men enough to propel it at the rate of considerably more than five miles per hour, carrying also the weight of passengers, their baggage, &c.

Now, sir, this boat could not have been “in all respects precisely” like mine, for had it been constructed on my plan it would not have been sufficiently buoyant to have carried all the weight above mentioned, and have ventured in to the sound, because its length (35 feet) would have of necessity rendered its other dimensions altogether too contracted for that purpose. What is called a six knot sailing breeze would have raised a sea sufficient to have subjected the passengers and workmen to a rather disagreeable and continued cold bath of several inches on deck; and as for cabins, not one fourth of a moderate number of passengers could have stowed themselves in the narrow and shallow holds of so small a twin boat as one built on my plan, only 35 feet long, must of necessity have been. Why, sir, a boy of eight years only could not have sat upright in one of them. But I do not by any means rest on this difference in proportions as a proof that my invention is one sui generis and not identical with Mr. Fairman's boat. That difference, although in itself strong, is comparatively my weakest point, and on that account I present it first. Had I, after splitting, as it were, a single boat apart, left the inner, or, as A. terms them, “approximate” sides, perpendicular, I should have arrived but half way to the completion of my invention. I found by inclining those sides at a very considerable angle towards each other, either in a right lined or curvilinear angle, that many various and important advantages were thereby attained, without losing the advantages resulting from the longitudinal parallelism of those sides. This inclination destroyed their vertical parallelism to each other, and thereby rendered the boat essentially different in form as well as in properties from Mr. Fairman's or any other kind of boat.

In my published letter I did not even mention the curvilinear inclination, for wishing to illustrate my plans by figures, I perceived that no figure which I could draw would be likely to convey a correct idea of that peculiar form, but, on the other hand, would rather be apt to create the impression that I had resorted to something like the five mile “swell” of which ARCHIMEDES speaks. That my agent might obtain a full and clear understanding of my invention, I went regularly to work and first built on paper a single boat, of such dimensions, he it observed, that she would be rendered by them, as a single boat, entirely useless. I then proceeded to divide her, and by the division made the straight inner sides perpendicular. Before altering this perpendicularity, I proved her to be superior to Mr. Burden's boat, on account of the straightness of the inner sides being “a principal point of superiority.” In this particular, a half stage only to the completion of my invention, it appears that Mr. F. had preceded me, though it would seem in so inefficient and imperfect a manner as to cause him to condemn it and resort to curved inner sides. It appears that he preceded Mr. Burden in building twin boats, and therefore, on that ground, (namely, their being twins,) may as well dispute the merit of invention with Mr. B. as with me. These (Mr. F.'s) inner sides, by being ultimately curved, exactly resembled Mr. Burden's, but even in their original perpendicular-

ity they were essentially different from my inclined sides, both in form and properties. It will not do for ARCHIMEDES, or any one else, to say that Fairman's boat was composed of timbers and plank, and therefore not similar to Burden's, which is composed of staves. The materials have nothing to do with the question, but the form only. I may with as much propriety build a commonly modelled boat of tin, and then get out a patent to prevent people from building such modelled boats from wood. If Mr. Burden chooses to build vessels from coopers' ware, and get out a patent for a new application of staves, why, let him do so; but he certainly cannot prevent men from using the common materials of vessels in constructing long, narrow, shallow, twin boats, having curved inner sides. I claim to have invented the right lined and curvilinear inclined inner sides as an “important and original improvement” on the straight parallel inner sides, which latter resemble mine only in their straightness and parallelism to each other.

After having proved in my published letter the superiority of the perpendicular, straight, parallel inner sides over Mr. Burden's curved inner sides, I then brought forward the inclination, which, I take pleasure in informing ARCHIMEDES, is a great distinctive and original merit of my invention. If ARCHIMEDES desires it, I can send him a copy of my specifications, in which I distinctly state that, “as an original and important improvement, the horizontally straight perpendicular inner side of each twin can be inclined at any desired angle;” and then proceed to lay down the various advantages obtained by this inclination, from which he can perceive that I do not consider the straight perpendicular sides as any thing very superior, though he can perceive from my published letter, and I now repeat, that I think them far superior to Mr. Burden's curved inner sides. Did I suppose you would allow room enough in this number of your journal for the subsequent matter of this communication and for the advantages, and their reasons, resulting from the inclined under sides, I would give them now. However, if A. desires it, he shall have them in a future number.

I would inform ARCHIMEDES, as a further distinguishing mark of originality, that in proportion as my crescent-shaped keels rise from a horizontal line they have a certain lateral inclination, such inclination being proportioned to the inclination of the inner sides; by which contrivance no curve is created on, but perfect parallelism of the inner sides is preserved. This lateral inclination of the keels, as they rise fore and aft towards each extremity, would cause a person, not critically viewing the matter, to suppose that the space between the twins at the centre would be greater, or wider, than that at either extremity; but an ocular examination of a model, (which my agent will with pleasure exhibit,) need only be made to prove that the parallelism of the inner sides could not otherwise be preserved, and that the space referred to is not wider than that at either extremity. Were the keels horizontal, or level, then not they, but the stem and stern posts only should be laterally inclined. Properly speaking, my boat has no stem and stern posts, for the pieces of timber which in common vessels would form those parts, are in my invention nothing more than a continuation and portions of my curved and laterally inclined keels. I have now, Mr. Editor, I think, fairly and clearly proved that my invention is a different thing altogether from Mr. Fairman's; and any man who, after reading the foregoing matter, would say that it is not different, and at the same time assert that Mr. Burden's invention is different from Mr. F.'s “swell” boat, would not excite the least surprise in my mind, if he should forthwith seriously set about proving that the moon is made of green cheese. But I have not done with Mr. Fairman's boat: I must sail a few miles further in her, and fully test her qualities.

* Strictly they are not approximate, for the two sides of either one of the twins being nearer to each other than the inner side of one twin is to that of the other, are, of course, what would come under the term “approximate,” from the very derivation and meaning of that word. I grant that the reader of A.'s remarks would know by the term “approximate” that he means the inner sides, because he speaks of their peculiar characteristics, straightness and parallelism; still, the term used as A. would is not correct.

* The very words of my specification.

It plainly appears, from the astounding "swell" mentioned by A., that there must have been some radical malconformation in Mr. F.'s boat not made public, perhaps unknown, by A.; for were it otherwise, Mr. F. never would have applied an obstruction to speed, and a cause of dead or back water, for the purpose of *diminishing* back-water. I say obstruction, for no man will have the hardihood to assert, that two boards set on edge, perpendicularly, in the water, whose ends at each extremity are at equal distances apart, but whose centres are sprung or bent in towards each other, can be moved in the direction of their length with a facility equal to that of the same boards when perfectly parallel from end to end. Yet a man who asserts that the "swell" increased the speed of Mr. F.'s boat, makes a much more unreasonable assertion.

Archimedes must not misunderstand me. I do not mean that he asserts what he does not believe, but I mean to say that the increase of speed could not have been the result of this swell, but of some other cause not observed, or not now recollected by Mr. F. Another glaring absurdity is involved in the assertion that Mr. F.'s swell increased the speed of his boat. Any person in the least acquainted with the subject must be aware that, of two boats having equal draft of water, the one which is *wider* will not under the same power move so fast as the other and narrower boat. Now, sir, Mr. F., besides partially choking up the straight passage between his twins, adds to their width by applying his swell, and yet, through his friend A., tells us that in consequence thereof his boat moved faster!! I do not call in question Mr. Fairman's veracity, or impute to him a designed omission of any particular necessary to be known in arriving at a correct understanding of his invention; but I must be allowed to suggest, whether he has, after the lapse of seventeen years, called to mind *all* the particulars of an experiment, which, it appears, after all, resulted in proving his invention to be useless. His friend A. evidently believes, and endeavors to prove, that it was a failure, for he says it was "previously like" mine, (but "I wish to inform him that he is completely mistaken, and he could not be more so;") and the whole drift and scope of his argument goes to prove (in his estimation) that my invention will not succeed.

If he thinks it is so manifest a failure, I think he pays, by arguing on it, no great compliment to the northern capitalists, a body of men of whose intelligence and general information I have always entertained so high an estimate as to suppose that no addition could be made to their ideas by the slight amount of argument which A. has deemed sufficient to expose the futility of my plans.

Some of the *facts* stated (no doubt sincerely) by Archimedes, are in direct opposition to previous and subsequent experience: the cause of back-water, the result of the "swell," and the comparative resistance experienced by the inner and exterior curves, being instances.

If *all* the particulars of Mr. Fairman's experiment have been recollected and told us, and if there has been no mistake, then, sir, I stand prepared to prove, that a hollow tin cylinder, perfectly open at both ends, will move on end horizontally through the water with more difficulty than a common tin tunnel in the same position, whose mouth or larger orifice shall be the forward end, and in diameter equal to that of the cylinder.

The fact is, that enough, fully enough, has been stated by Archimedes, to prove that Mr. Fairman's useless invention was nothing more than a division into two parts of a single boat of the usual model and proportions. Archimedes does not tell us how fast Mr. F.'s boat moved before the application of the wonderful swell, although he says the average gain resulting from the swell was *five* miles per hour; but, allowing, for arguments sake, that this swell was no obstruction, still no man in his senses can believe that the gain was ten

per cent. on the original speed. Allow this gain, however, and by calculation we find her *improved* speed was just 55 miles per hour!! As a low rate of increase produces such astounding results, we will endeavor to get this famous boat out of difficulty by supposing the gain to have been equal to the incredible quantity of 50 per cent. and we then find that her ultimate speed must have been 15 miles per hour!

This will never do: we will therefore make one more effort to bring her within reasonable bounds as to actual speed, by going *out* of all reasonable bounds in assigning her increase of speed, from the application of this unmanageable swell, to have been 100! per cent.; yet, allowing the increase to have been this, I may safely say, physically impossible quantity, and we then find that Mr. F.'s boat moved at the rate of 10 miles per hour, a velocity equal, if not superior, to the rates of any steamboat of that day, and which should therefore have been immediately instrumental in covering our waters with Fairman's *swell* boats, worked by men or horses. What the Connecticut people could have been about, when they permitted such an invention to slip through their fingers and be carried to Demerara, I cannot conceive, for it certainly must have been amongst Connecticut vessels a *swell* dandy of the first order. At all events, Archimedes, who alludes to my prudence respecting my heirs, must allow that Mr. F. did not manifest the usual prudence of the sharp-witted New-Englanders, when he sold so *valuable* a boat for the pittance \$300, and took no further steps for the benefit therefrom of himself and heirs. Archimedes has put his friend between the horns of a most provoking dilemma. Should he state the gain resulting from the "swell" to have been within any reasonable bounds, say 5 to 10 per cent., he virtually asserts that the improved speed of the boat was 55 to 105 miles per hour!! If, while advancing through the air at such a rate, he should be able to catch his breath and tell us that this astonishing speed is imaginary, and the result only of stubborn, unbending arithmetic, and that the actual velocity of the boat was only 8 or 10 miles per hour, he thereby makes the incredible statement, that this magic swell conferred a gain of 100 to 166 per cent.!! Why, sir, had I been the proprietor of that "wonderful" boat, I should have gone on *swelling* her at so swelling a rate, that in my exultation, not recollecting the well known catastrophe of the frog *aping* the ox, I should have probably paid so little attention to her powers of endurance as to have absolutely caused her explosion into thin air. With respect to the back-water mentioned by A., I will inform him that it could not by any means have been created by the straight *unobstructing* sides. Does not A. know that back-water is caused by *obstructions*? If he needs explanation, I beg to refer him to "OBSERVATIONS ON THE PREVAILING CURRENTS OF THE OCEAN," as published in your last number, and he will there find the subject handled in a masterly manner, and I trust to his satisfaction. The hollow in the water which he alludes to, with the evident intent that the reader should consider it as a result of the straight sides, was caused by the action of the wheel, and was by no means an evidence of back-water. He ought to know that all paddle wheels, revolving in the water, create waves, and of necessity hollows, and that hollows resulting from such a cause are no evidence of back-water. He, or rather Mr. F., saw the hollow; and A., without further ceremony, assumes it to have been back-water.

I have now done, Mr. Editor, with Fairman's famous swell boat, unless, indeed, some one of the water gods should buoy her up to the surface, and by putting her in my way render it necessary for me to run her down again.

I have, sir, more than once in my life, had occasion to observe how very easily a false issue can be made up on any subject, and the weaker side of an argument be thereby made to appear the strongest. This remark is called

forth by the "best way to decide the point" of strength between Mr. B.'s and my inventions, as suggested by Archimedes. I will grant, to his utmost desire, that arches are stronger than angles, and that a barrel will resist external pressure longer, and of a greater amount, than a box would, made of the same kind and quantity of materials. Granting all this, I still assert, with perfect confidence of its truth, that my twin boat, (that is, the *whole* fabric,) can be constructed vastly stronger than Mr. Burden's, and would in consequence be enabled to endure firmly and uninjured the severity of a gale at sea, which would be sufficient to rend Mr. B.'s twins asunder, and scatter them and their superincumbent cabins and fixtures on the surface of the waters. I said a false issue can be easily made up, not meaning that Archimedes would desiguedly do so. He, I have no doubt, is fully persuaded in his own mind, that the barrel and box test decides the question, and is not aware that when he proposed that test he was making up a false issue. The question is not whether *one* barrel thrown into the water is enabled by its circular or arch-like form to endure greater pressure therefrom than *one* box, but whether two barrels can by any possibility be *connected* externally in a manner better to resist the violent tendency of the waves to separate them than two boxes: said boxes, please to observe, having the advantage of stout internal frames, *upon* which the exterior planks are secured, and the connecting pieces or timbers of which boxes are not secured upon those planks, but inserted through them into the boxes, and forming part and parcel of those frames. Were my twins formed merely of the exterior planking, having no keels and timbers, or internal frames, I would by no means assert that *one* of them would be in itself stronger than one of Mr. Burden's, and better able to resist the compressive power of water. But whoever heard of any the least detriment happening to vessels as now usually constructed with keels, and timbers, from compression of the water. Why, sir, this unalterable property of water is a source of safety to vessels properly put together, for were it suddenly to be annihilated, and its other properties still exist, every *freighted* ship on the ocean would be so much ruptured by the expansive weight of her cargo as to soon go to the bottom. Whether *one* of Mr. Burden's twins is or is not able to resist the compressive power of water better than one of mine is a question in which no one can take any interest, until the heretofore immutable laws of nature become so altered that the power in question shall be able to crush together the two sides of vessels as now usually built. When that period arrives I think it will be time to discuss the question, and I am strongly of opinion, that I should find ample ground upon which to uphold the keel and timbers, (that is, the *back-bone* and *ribs*,) the knees, braces, and planks, against mere planks alone, whether those solitary planks are put together arch-like or otherwise.

If Mr. Burden pierces his twins, (thereby, observe, injuring the arch principle of his invention,) and introduces therein frames similar in any respect to keels and timbers, or to any thing else, into which he would secure his connecting timbers, he does just what I do, and therefore cannot connect his twins by that means stronger together than I do mine. But, as I am informed, and agreeable to the published description of his boat, he does not introduce frame work within his twins for the purpose of securing them together, and therefore must connect them by external fastenings, that is, fastenings secured to the *exterior* of the twins. When practical, scientific ship-builders pronounce such a mode of fastening twins together to be superior to mine, I shall then begin to think I am in error, but the opinion of Archimedes is not a lever of sufficient power to disturb my confidence on that point in the least.

Before I let the barrel of Archimedes off, I

feel bound to give it a few more buffets, which its arch-like structure may perhaps enable it to withstand.

Arches, we all know, when sustaining a very severe pressure, especially if it comes against them with a sudden and forcible momentum, are intended to receive that pressure spread equally over all parts, or else it might, by being concentrated at one or two points, be sufficient to break an arch which it could not even shake were it to bear equally on all points. Recollecting this, we will take Mr. Burden's and my inventions to sea, in a heavy gale, and in endeavoring to escape its fury we both unconsciously steer towards a hard sand bank, upon the ridge of which our boats strike for some time before we can force them over. The sides of this ridge being known to be quite shelving and steep, we thereby ascertain that at every blow or descent in the trough of the sea, a surface of twelve square feet only of the bottoms of our boats is brought in contact with it. Now, sir, here is violent and sudden pressure concentrated to a point with a vengeance, and I think, if you were on board my boat, that you would congratulate yourself that you had gotten a firm stout frame and planking outside of that between yourself and the ridge, instead of the bare staves of Mr. Burden's boat. I doubt not that you could tell without hesitation which boat would be soonest broken through. "So much" for the comparative strength of the two inventions. Archimedes asserts, that by making the inner sides straight I only remove the angle of resistance to the exterior side. I beg you to observe, that he here calls the curve of the inner sides, that is, the "swell," an angle of resistance, and yet, by applying this resistance, Mr. F. increased the speed of his boat!

I agree with A. that I remove an angle of resistance; but is he not aware that I diminish the degree of resistance by that removal? The last paragraph but one before the postscript of my published letter I should think ought to have suggested to him the reason why I diminish the resistance. His not perceiving it satisfies me, that, like his great namesake, he knows better how to set about destroying vessels than how they act upon, or are effected by, the water.

But to the point: we will suppose that the water impinges upon the two bows of a vessel sailing at a certain known rate, with a constant force of 1000 lbs., which force, setting aside the inertia resulting from the gravity of the vessel, is the only opposition to her keeping pace with the wind.

Of course, two such vessels, not at all connected, would be impinged upon, sailing at the same rate, with a total force of 2000 lbs. Connect those vessels, so as with them to form a common twin boat, and then, sir, although the two exterior bows would be resisted only by the original force of 1000 lbs. the two inner ones would immediately experience a greater opposition, which would be in proportion to the proximity of those inner bows to each other, as well as proportionate to other particulars, such as moving power, angle of the bows, &c. Why? Because the exterior bows could, as when the boats were unconnected, easily dissipate and disperse the impinging water in the shape of a swell, or wave, that would be left behind rolling along on either side; but the two inner bows would, as to this dispersion, act in opposition, and would thereby immediately accumulate a head of water, which they would have to force along before them constantly, and make it keep pace with them at any rate of speed, because more water would make its entrance in any one moment of time between those inner bows than could in the same space of time pass out from between them at the point where they converge towards each other. It must be admitted, of course, that, as connected twins, these two vessels would experience more opposition to their motion than 2000 lbs., the amount experienced when single. By removing the inner bows, or

angles, and placing them wholly on the outside, I should have to work against the original amount of resistance 2000 lbs. only.

Mr. Burden's inner as well as exterior bows, or angles of resistance, are so very acute, as to the careless spectator thereof might appear too trifling to create much opposition; but, let that spectator reflect on the degree of opposition which must inevitably result from the motion of a volume of water 21 or 22 feet wide, with a velocity of 12 or 15 miles per hour, through a passage not over 150 feet long, and whose width decreases gradually to its outlet, until it is there only 16 feet.

If dead water, as sailors term it, or back-water, according to Archimedes, would not be created thereby, both at the head and stern, I must confess that I am at sea on this matter without rudder or compass. That a twin boat built on my plan would be superior to one on Mr. Burden's, in point of draft, was, I think, clearly proved in my first letter, and therefore needs no further argument. Archimedes does not deny it. After having read the foregoing matter, Archimedes must in candor allow—

1st, That I am the inventor of the boat described as mine;

2d, That it is different from Mr. Firman's;

3d, That it is superior to Mr. Burden's, in the matter of its parts being strongly connected together;

4th, That it has less draft than his; and

5th, That the straight passage in the centre of Mr. Fairman's boat, as originally planned, or of mine according to its unchanged plan, is an advantage over Mr. Burden's boat.

That this communication will operate "for A.'s future benefit, and the benefit of others," is my sincere wish and its object.

Before concluding, I deem it necessary to state, that my letter, as published in the Evening Star, from which I suppose you copied it, was printed very imperfectly; several omissions of single words, and, in one instance, of a whole line, having been made, by which the true meaning in some parts is almost wholly obscured. When I learned that it was to be republished by you, I forthwith sent on directions for it to be corrected, but they arrived too late. I am, sir, very respectfully, your obedient servant,

CHARLES HARRIS.

Harris' Steamboat. By A KNICKERBOCKER. To the Editor of the Mechanics' Magazine, and Register of Inventions and Improvements.

Sir,—In your last number I saw a description of a twin-boat patented by Mr. Charles Harris, which he appears to value very highly, and thinks that his boat will supersede that of Mr. Burden.

There were also some remarks from "Archimedes," respecting the above invention, and stating that a Mr. Fairman, of Middletown, Ct., had constructed a similar boat in 1817.

I wish to inform Mr. Harris, (as it may probably save him or his friends considerable expense,)—also Archimedes,—that during the late war, Robert Fulton built for the United States Government the steam-frigate "Fulton the First," and that she was "split into equal parts longitudinally, from stem to stern, down through the keel, and the two halves placed a distance from each other in parallel lines, and joined above water by timbers and decks in the most substantial manner." Previous to or about the same time, I saw a boat built on a similar plan, called the "Happy Couple." Not answering the expectations of the projector, the Couple were cut asunder, the beams shortened, and the two halves fastened together by the keels, stems, &c., and thus made a single boat. She was then used as a sail-boat. I have sailed in her often. Her projector, Mr. I. J., now resides in this city.

A KNICKERBOCKER.

New-York, April 7, 1834.

The following communication, disputing the claim of Mr. Burden to be considered as an in-

ventor, appeared in the Quebec Gazette of 2d April, 1834.

To the Editor: Sir,—It is generally the case that those who bring into practical operation any invention in the arts,—if that operation be attended with great public advantages,—the enterprising individual who has been the means of securing them receives the merit of the invention.

The steamboat first practically introduced on the Hudson, by Fulton, had many years before been put in operation near Glasgow, and then Fulton, a native mechanic, assisted the real inventor, and brought with him to America the labor, genius, and experience of his master.

What is now called *Burden's boat* is not new. A boat exactly of a similar construction as to form, and differing in no wise except in the hull, which in the latter is on the principle of a common barrel, has been publicly moving across the Frith of Tay, at Dundee, in Scotland. A simple description given in the London Penny Magazine, for July last, will convince every one that Mr. Burden's invention is, so far as we know, limited to a mere barrel build, (and even this may not be his own, as *Annesley's ships*, built in Quebec, were at least nearly similar,) which affords lightness and buoyancy, but which is attended with great danger on the boat's striking.

"The common road from Edinburgh to Dundee runs in nearly a straight line from Pettycur through the county of Fife, and across the Frith of Tay, which at Dundee is about two miles in breadth. There is, on this passage, an excellent steamboat of a peculiar construction, the paddles being placed in the middle, as if there were two boats joined, and the form being such that it moves equally well with either end foremost."—[From the Penny Magazine, Monthly Supplement for July, 1833, page 293.]

O. Q.

AGRICULTURE, &c.

Planting Embankments of Railroads with Mulberry for Silk Establishments. By E. SAYRES. [For the New-York Farmer.]

MR. FLEET,—I have at different times noticed railroads, especially the Schenectady railroad, much injured where the embankments have been made, by frost and rain, by the earth slipping in large bodies after the winter season. This I think might be greatly obviated by planting the embankments with some hardy plant, that would root into and connect the soil together on the outer surface, so far as the frost generally enters. The white mulberry, or the Chinese *Morus multicaulis*, is perhaps deserving a trial for this purpose. The plant is hardy, and grows on a sandy soil, which is generally to be found on railroads. It roots deep, and is very fibrous, which would net the soil together, as it were. There is also another consideration which might be taken into the account, viz., the formation of a silk establishment, which under such auspices might be carried on advantageously and extensively. I hope this will bear the consideration of some abler pen. Many hundred thousand trees may be planted in this way on an extensive railroad. The trees might be planted a yard apart each way, and headed down every spring to 18 inches, by which young wood would be obtained, and the plants would be very convenient to pick the leaves. This method would give almost any required quantity of leaves to carry on an extensive establishment. The leaves could easily be conveyed to some central place by the cars for the worms, and the silk when manufactured might also be conveyed in the same

manner to a market, or to places of conveyance thither.

In conclusion, I have some reason to believe, were this method to be adopted, that the appearance of the embankments would present a very interesting scene to the traveller, and the surrounding country. Comfort would also be something in favor, as the dust that often annoys the traveller would be allayed by this planting, and, I trust, were it once adopted, it would become general in most parts where railroads are formed.

Much more might be said on the subject, which I leave for a more able pen.

With respect, &c.

EDWARD SAYRES.

Hyde Park.

Laying out and Management of Gardens. By WM. SCOTT. [For the New-York Farmer and American Gardener's Magazine.]

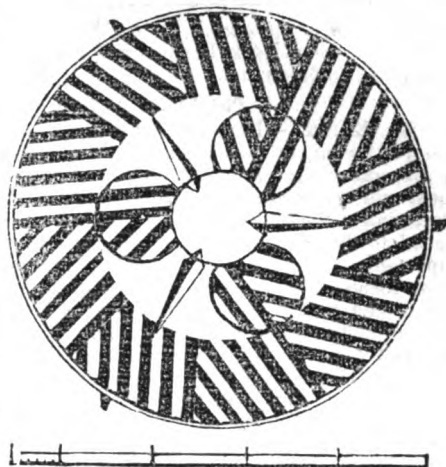
MR. EDITOR,—This being the season of the year when almost every one is in some way delighted and interested in gardening, I take the liberty to submit a few hints, which I hope may not be unacceptable to your readers. The importance and utility of gardening require no advocacy; all being agreed that its departments are fraught with lessons of interest to every man. The floral department in particular yields the most economical, healthful, and delightful pleasures that can be procured. The culinary department cannot, it is well known, be dispensed with by those who have regard to the delights of a wholesome table. By an outlay, not to be mentioned with hundreds of other daily and yearly expenses of every man, who has any property, a table may be supplied the whole year round with the choicest kinds of vegetables. The fruit garden is not to be overlooked, although this is a land where it grows by the highways and byways. No fruit is so grateful as that plucked by one's own hand and produced by one's own culture. There is nothing more enchanting than the boughs of faithful trees bending with the weight of their luscious load.

I shall point out a few rules by which the most useful productions of the garden may be more easily obtained than is generally imagined. As the season is too far advanced for either pruning or planting fruit trees to any extent, I will merely observe that they should never be planted too deep nor too close. New planted trees should be kept from drought by laying some litter or inverted turf over their roots. Almost all vegetables intended for a full crop should be put in the ground in this month or early in May. It is, however, never too late in the season to lay out flower or fancy gardens, with the exception of transplanting shrubbery, which, indeed, can be done if in pots or boxes, or if they can be raised without disturbing the roots or the soil about them. A garden may be laid out and furnished in the heat of summer, so as to look as well as if it had been done earlier in the spring. The first season it seldom meets the proprietor's wishes, let it be done at what time it may; therefore, he has through the course of the summer the advantage of getting his work done at a time when other gardening operations are not crowding on the gardener's time. He will also have an opportunity by the succeeding fall or spring to make his selection of plants. All things considered, I prefer summer for laying out new pleasure grounds, or making improvements on old ones. When commencing, the

first thing to be done is to fix on the levels of the ground. Having accomplished this, and regard having been had to the appearance of the figures from the most prominent station, drawings of the whole plan should be taken, and an accurate measurement of each figure made on geometrical principles. Accuracy in this part of the business is of first importance, because a small mistake at one place from which measurements are frequently taken, great blunders may occur. Having ascertained how the ground holds out, you must next proceed to make up the edge with boxwood, &c. This is done by making them very firm by trampling, beating, and smoothing them off to the proper levels, and cutting it cleanly out for receiving the box. This should never be omitted to be done first, for otherwise it is impossible to be so neatly finished. The plantation of shrubs next follow, which should be done with the greatest care, making large pits, spreading the roots horizontally out at their own level, and watering immediately after. The whole arrangement would be too tedious to describe in this article. No person can arrange them properly unless he be fully acquainted with the habits of all of them. Generally, however, the free growers should be put in the most exposed situation on poorest soil, and the tender and more shy in the most sheltered places and best soil, keeping the largest always at the greatest distance, and filling up the spaces amongst them with herbaceous plants in the same manner. The laying down of grass plats is so simple that I would not mention it but for the great improvement that could be made on those of this city. The want of neatness and order greatly detract from the pleasure these portions of ornamental grounds should afford. Nothing looks better than a fine smooth lawn or grass plat. To obtain this, the place intended for it may be made up of any coarse stuff to within six inches of the top. Then lay on that thickness of good earth, but no ways enriched. Tread it and beat it as firm as possible when in a dry friable state, and when perfectly even either turf or sow it. Some people contend that it is owing to the climate that the grass cannot be made as fine here as in England; but the writer has only to refer to several places in this city under a proper management, to prove the contrary. The difference is owing almost entirely to the laying down and keeping. Yours, respectfully,

WM. SCOTT.

REMARKS.—If florists and nurserymen were more in the habit of keeping perennial flowering plants, grape vines, and dwarf fruit trees, in pots and boxes, it would be very convenient for those living in cities and towns to lay out and ornament their yards and lawns in the summer. Merchants and traders in cities have more leisure from the beginning of June to the end of August, than either in the spring or fall. From the fact that neither they nor their families find it convenient to have yards laid out in April and May, it is omitted altogether. We presume one reason why English grass plats and lawns retain a more fresh and lively green than they do in this country, is that they have a greater variety of natural grasses. At the seed store in Barclay street may be obtained upwards of twenty kinds of English grasses, in small or large quantities. Also, a mixture of the kinds suitable for grass plats, put up in small packages.



GREAT IMPROVEMENT IN MILL STONES.—

The accompanying drawing represents an improvement in mill stones, which, from the following certificates, would seem to be of very great importance. It consists principally in letting in the air, as is denoted in the drawing, on the flour while grinding, and in expediting the operation. The patentee, James Preslow, and the original purchaser, George B. Jeffery, reside at Auburn.

Auburn, March 18, 1833.

We, the subscribers, having examined the plan for which James Preslow has obtained a patent for the discovery of an improvement of preparing mill stones to expedite the grinding of grain, and also seen an experiment of the grinding of grain at the mills of Carhart and Polhemus, in the village of Auburn, with mill stones prepared and dressed according to the improvement for which said patent is obtained, do hereby certify that we were present at said mills, and saw fifteen and a half bushels of wheat ground with one run of stones in a superior manner, for flour, within the space of one hour.

AMBROSE COCK,
I. S. MILLER,
E. MILLER.

Manlius, May 18, 1833

We, the subscribers, having had our plaster mill stones dressed by Mr. James Preslow, according to his method of dressing, and from the experiment do believe it to be the greatest improvement that has ever been offered to the public, feel bound to say in this certificate, that by the experiment tried, our mill ground twice the quantity in the same given time, and equally fine. And we believe that in dressing plaster mill stones according to said Preslow's method, that the quantity can be quite or nearly doubled, we therefore cordially recommend it to the patronage of the public.

JACOB R. DE PREY,
JAMES I. D'ELERY.

Milford, June 4, 1833.

Fifty-two bushels and a half in four hours and forty-nine minutes, the flour very good. We have no hesitation in recommending the improvement, from our own experiment as well as from the science and respectability of the gentlemen engaged in the improvement.

DISBOROUGH & LUDLOW.

Auburn, April 1, 1833.

We certify that the patent of James Preslow, for an improvement on mill stones, for facilitating the grinding of grain, &c., has been in operation in our mill at Auburn for several months, which we consider a valuable improvement; it more than doubles the grinding, grinds much cooler, and separates the flour altogether better in the bolts, and greatly improves the quality.

CARHART & POLHEMUS.

Application may be made to Mrs. White, corner of Beekman and Pearl streets, New-York.

Manufacture of Madder. By S. W. ABBOTT.
[For the New-York Farmer and American
Gardener's Magazine.]

Philadelphia, April 19, 1834.

MR. EDITOR.—Dear Sir: From the interest you feel in the dissemination of knowledge in promoting the culture of profitable productions, which our country so eminently calls for, I have taken the liberty to ask your advice with regard to the cultivation of an article of much importance in commerce. I allude to Madder. Your means of possessing information are no doubt such that will be of importance. The mode of cultivation I can gather from the Encyclopedia, but it does not go into the details necessary in preparing for the merchant or the manufacturer. The soil of most parts of our State, and particularly of the State of New-York, must be admirably adapted to its culture. If you can give me any light on the subject, it will afford me pleasure to reciprocate the kindness. Yours, very respectfully,

S. W. ABBOTT, 127 Market street.

REMARKS.—In the Encyclopedia of Agriculture, we find the following paragraph:

"Madder is sometimes cultivated, but only on land of the best quality, and with plenty of manure. At the end of April or May, according as the young plants are large enough to be transplanted, the land must be ploughed in beds of two feet and two feet and a half wide; the beds are then to be harrowed and raked, and the young suckers of the roots or plants are to be put down in rows, at intervals of a foot or a foot and a half, and at six or eight inches distance in the row.

"During the entire summer the land should be frequently stirred, and kept free from weeds. In the month of November, when the leaves are faded, the plants are covered with two inches of earth by a plough, having the point of the coulter a little raised or rounded, so as not to injure the young plants.

"In the following spring, when the young shoots are four or five inches long, they are gathered or torn off, and planted in new beds, in the same manner as has been pointed out above; and then in the month of September or October, after the faded leaves have been removed, the old roots are taken up.

"The madder thus taken up should be deposited under cover, to protect it from the rain; and after ten or twelve days, placed in an oven moderately heated. When dried sufficiently, it is gently beaten with a flail, to get rid of any clay that may adhere to the plants; and by means of a small windmill, is ground and sifted, to separate it from any remaining earth or dirt. It is then replaced in the oven for a short time, and when taken out is spread upon a hair-cloth to cool; after which it is ground and cleaned once more. It is then carried to a bruising-mill, and reduced to a fine powder, and is packed in casks or barrels for market."

Madder commands in the New-York market from 10 to 16 cents per pound, in its dried and sifted state. It is almost entirely imported from Holland. It is raised in some parts of Connecticut, but in quantities so small, that the dealers in the article, in this city, are scarcely aware of the fact. We shall endeavor to obtain particulars from the growers in that section. We would thank any of our readers to furnish us with further information.

WONDERS IN NATURAL HISTORY.—They last week, as the newspapers record, murdered a venerable ram at Eaton Hall (well may it be called, who, if he had been suffered to live to his birth-day, which he was preparing to keep next month, would have been twenty-three years old. He was born without ears, though he lived so many. The inhabitants of Derby are said to be in great distress at having their ram beat by a Chester 23 yearling.

NEW-YORK AMERICAN.

MAY 10—16, 1834.

LITERARY NOTICES.

No. XXIII.

Prairie du Chien, Upper Miss. Feb. 1834.

The shadows of its western bluffs had deepened far over the broad surface of the ice-bound Mississippi, though a flood of yellow light still bathed the gray walls of Fort Crawford, as its long low barracks lay in the form of an isolated square on the level meadow beneath us; while further to the north, a number of dingy wooden buildings, which showed like a fishing-hamlet on the immediate bank of the river, were momentarily growing more indistinct in the advancing twilight as we approached their purlieus, and drove up to a tavern about half a mile from the garrison.

It was within pistol-shot of the river, a comfortable looking frame building with a stockade fence around it, made with picket some ten or fifteen feet high; a voyageur or two, with a few half breed looking "gumbo" French loitering about the door, and a tall Menominee Indian, with a tuft of drooping feathers on his crown, standing with folded arms apart from the rest.

A portly good-looking German, who had formerly been a non-commissioned officer in the Infantry, proved to be the landlord, and bowed me, like a master of his business, into a room heated to suffocation by a large Canadian stove, placing at the same time a strip of neatly written paper in my hands. Imagine my surprise when I discovered it to be a play-bill! 'The public' were respectfully informed, that the sterling English comedy of 'Who wants a Guinea,' with Fielding's after-piece of 'Don Quixote in England,' with songs, recitations, &c. would be presented that evening, by the soldiers of the First Regiment at Fort Armstrong. Nothing could be more apropos. I had just ascertained that on account of the present deep snows, with the prospect of an early thaw, it would be almost impossible to get up to the Falls of St. Anthony, whither my ambition led me, at this season; and having now no further plans to arrange during the evening, and being wholly unprovided with letters to the officers of the garrison, I was really rejoiced at such an opportunity of entering its walls incognito.

The sleigh in which I had come here carried me in a few minutes within the sallyport, and handing the ticket, with which my host had provided me, to a soldier who stood as door-keeper, I entered a large barrack room, fitted up very neatly as a theatre by the soldiers themselves; the scenery, quite cleverly done, being all painted by them, and the lights ingeniously placed in bayonets, prettily arranged, a contrivance suggested by their own taste. The seats, rising like the pit of a theatre, were so adjusted as to separate the audience into three divisions, the officers, with their families, furnished one, the soldiers another, and gumbo Indians, and a negro servant or two making up the motley third. A superb-looking squaw of the Fox tribe attracted my attention as I entered the room, and prevented me from advancing beyond the worshipful part of the assemblage last mentioned, as she sat between two pretty but plainly dressed Menominee girls, in a more rich and beautiful costume than I ever saw at a fancy ball. The curtain rose while I was studying her noble features and tasteful finery, and contrasting the striking and somewhat voluptuous character of both, with the simple attire and less mature charms of the two nut-brown beauties beside her. Every eye was then directed to the stage, and I remained standing against the door-post till the act was concluded: and then, just as I was wishing for some one to whom to express my surprise at the degree of skill and judgment with which the soldiers played, considering they were but amateurs, an officer made his way up to me, and very politely insisted upon my taking his seat in the more favored part of the house. The ordinary interchange of commonplaces between gentlemen who are strangers to each other ensued, and then, without his knowing my name or the slightest circumstance in relation to me, an invitation to take up my quarters in the garrison followed. I declined the invitation, but we exchanged cards; and I had hardly got through breakfast in the morning, when my new and gentle-

manlike acquaintance, accompanied by Colonel T., commanding officer, and a young subaltern, called to repeat the invitation of the evening before, bringing a soldier, with a sled to transport my baggage, and a led horse to carry myself over to the garrison. It would have been absurd to meet such cordial and unfeigned proffers of hospitality with further ceremony; and an hour after found me with a handsomely furnished room of my own, a fine saddle horse placed at my disposal, and a servant always in attendance, sitting down to the mess with as fine a set of young fellows as I ever met with. I have been particular in describing my initiation into this agreeable and accomplished circle, merely to give you some idea of the gentlemanlike courtesy and frank hospitality, which distinguish the officers of the army, wherever I have been fortunate enough to meet with them.

I have now been here nearly two weeks. The weather has been mild and beautiful, and my time, in such congenial society, passes delightfully—so much so indeed, that when I wake each morn at reveille, it is with a kind of sad feeling I remember that the twenty-four hours just past, brings me nearer to the time when I must start again on my solitary tour, through regions where fortune can hardly throw me a second time among such companions. The scenery around *Prairie du Chien* would please you much. The snow has now entirely left the bosom of the prairie, though it still hangs like flakes of morning mist around the rocky brows of the adjacent bluffs. The singular landscape created by these bold heights, has been called monotonous; but I do not find it so. Not a day, not an hour passes, but they present some new appearance. Each shifting cloud brings out some new angle of the gigantic blocks; and, whether the rosy tints of dawn warm their steep sullen brows, or the glare of noon settles on their round summits, and tries to pierce the deep ravines which block them out from each other, or sunset, with its mellow hues, lingers among the long grass which points their "umbered face," when they first swell from the plain, to me they are always lovely, grand and peculiar. I ascended one of these, accompanied by an officer on horseback the other day, by winding up a ravine in the rear, which brought us on a round, bold grassy height, about 400 feet above the prairie; to which the bluff descended by two sheer precipices of rock, of about a hundred feet each, with alternate slopes of soil, covered with long yellow grass,—the whole having the appearance of some vast fortification—an enormous bastion thrown up in huge layers of earth and stone. On the very summit was one of those ancient fortifications, the mysterious mementos of an unknown race, whose gigantic and enduring works are scattered over thousands of leagues of this Continent, to puzzle the curious and set at nought the surmises of the antiquarian. I trod each winding of the turf-covered rampart, and counted what appeared to be the embrasures for artillery, as my military friend commented upon the position, and described a number of similar remains which he had examined in different parts of the Western country, while we laughed together over the self-satisfying explanations of those closet theorists, who would attribute the fortified appearances of this tall elevation, and the enormous mounds in the vicinity of St. Louis, with the sunken remains on the alluvial bottoms of Illinois, the perfect forms which give its name to Circleville in Ohio, and the deep entrenchments which channel the rocky hills of eastern Kentucky, alike to the action of water: suppositions upon a par for ingenuity with those which account for the existence of the prairies by the sudden withdrawal of the same element from what was formerly the beds of a chain of vast inland lakes; the same prairies, in every instance that I have yet seen, except the single one of *Prairie du Chien*, being high table land, some sixty or a hundred feet above the streams and groves which occasionally chequer them. I forget whether I have before mentioned that the Indian name for prairie (*scutay*) which means also *fire*, would explain their origin to any one whose own dullness prevented him from observing how the action of that element extends these grassy domains every season in one direction, while it leaves them to shoot up into a luxuriant growth of young forest in another.

But turn with me to yonder view of the Mississippi, where a hundred wooded islets of every possible form repose upon the glistening ice that silvers its broad bosom. How grandly does the bold promontory of 'Pike's Hill,' interlocked as it seems with the gray crags of the Quiseconsin, shut in the lordly stream on the south; and there, where the blue water has broken its white fetters, and those diminutive figures are leaping from one ice cake to another, as they sparkle in the sun along the smooth eastern

shore, how beautifully the tall brown grass bends over the pebbly margin! You may look now, though it is two miles off, into the very centre of Fort Armstrong, where the gleam of arms flashing over the sanded parade, tells of troops in motion, though the sound of their drums can hardly reach your ears. What a point would this be from which to view the meeting of hostile forces! The armies of Europe might manoeuvre on the smooth prairie below, and not a guide could indicate a position without its being manifest to your eye long before a battalion could attain it.

There are a great many high bred dogs kept at this place, and shooting and hunting of all kinds of course form one of the chief amusements of the officers of the post. Indeed if an enumeration of the setters, greyhounds, and Newfoundlanders, which are severally kept for grouse, wolves and ducks were made, without counting the curs and Indian dogs kept by the gumbos and Indians around, the place, as I have heard it observed, might rather be called prairie des chiens, than left as at present in the singular number. A very successful experiment has been made here in crossing the greyhound and Newfoundland, the offspring, I am told, being highly sagacious, and a match for a full grown bear. If the race be continued, they ought to be dubbed Elkhounds, from their adaptability to the pursuit of that fine game, which abounds over the river. I was on a wolf-hunt by moonlight several hours before dawn a few mornings since; and though we were not fortunate enough to start any game, I for my own part had a very good chase.—Among the other dogs of the pack was a greyhound of the wolf species, a breed which Sir Walter Scott says is so rare in the British dominions that I had no idea that there was one of the blood on our continent. This long haired rascal I mistook, by the doubtful light of the moon, for a real wolf; and my horse, the hero of a hundred wolf hunts, seemed to share the blunder. I came upon the dog suddenly in some long grass, and spurring my horse upon him, he made at once for the bluff on the further side of the plain, thinking doubtless, from the eager bounds of my horse, that there was game in view. Convinced of my good fortune from the course he took, I shouted to my companions, while the rest of the pack broke out into full cry, and away we went together. We ran more than a mile before the sagacious brute I rode seemed to discover the blunder, and checked his gait. The officers, after enjoying a tolerable laugh at my expense, relieved my chagrin by mentioning that the same dog had repeatedly come nigh being shot by some of the oldest hunters of the country, who, in broad day, had, as they expressed it, "mistrusted him for some wild varmint."

I have amused myself somewhat here in studying the Indian languages, though I cannot say with much industry; the amount of my exertions consisting in learning some eight or ten phrases in the morning, and then strolling off to repeat them in the afternoon at the straggling lodges which may be found within a mile of the garrison. To one of these, where an old Sauk squaw was making a pair of embroidered mochasons for me, I went last night several hours after nightfall. The wigwam was formed of mats of woven rushes, subtended around a frame work of osiers in the form of a hemisphere, with an opening at the top to let out the smoke. Approaching this primitive abode, I heard the shrill voice of the hag within in what sounded like high altercation with some one who answered in a different language from herself; and, raising the dirty blankets which formed a door, while I crawled on all fours within the low threshold, I found that the lady of the castle was only gambling amicably with an old Menominee Indian, who sat cross-legged on a mat opposite to her. A finger ring belonging to the squaw lay upon the mat between them, and they were trying which of the two could throw the scalping knife of the Indian most often within the golden circle, a score being in the meantime kept by each on the edge of the mat, where sundry marks, made with a dead coal, supplied the place of the ordinary pearl counters used by card players. Having always despised gambling as one of the most effeminate and mean sources of excitement—the fitting employment of hands that were never made to handle arms or curb a charger—the refuge of those emaciated minds that smoulder over the kindling page of the poet and historian, or stagnate in listlessness amid the thousand spirit-stirring encounters of the breathing world around them—I had neither English nor Indian phraseology to participate in their comments upon the varying chances of the game. The squaw briefly answered my inquiries about the mochasons, while I raked the embers of her fire together and dried my boots by its cheerful blaze; and then, while she tossed the long elf locks from her high cheek bones and the upper

part of her loosely arrayed person swept the ground while bending low to view the mark of the knife which gleamed aloft in her shrivelled hand, I glanced from her weird features and squat form to the calm, but piercing ken, and still erect figure, of her savage companion, and raising the blanket, left them once more alone together.

Let me conclude this letter by furnishing you with an Indian serenade. It is written in a sort of Lingua Franca, or mongrel tongue, made up of words taken alike from the Menominee and Ojibeeay or Chippeway, and possibly other languages, much used on the frontier. From the manner in which it was taken down, I do not hold myself answerable for its correctness; but, uncouth and jaw-breaking as the words may look upon paper, they really sound musical from the silver tongue of an Indian girl.

INDIAN SERENADE.

Onaiweh! Paikessal meteequon, quonadhj cuakenoed masco-taiwenin.
Awake! flower of the forest; beautiful bird of the Prairie.
Onaiweh! Onaiweh! kepshoshe moscalhecon.
Awake! awake! thou with the eyes of the fawn.
Taupai kaisainopenayan, mannehatuk ashenah pahkeesal-kew taupai cotainen aissaw.
When you look at me I am happy, like the flowers when they feel the dew.

Nodin keokeneta waikon ashenah menouqt paik salwen o-kenega kshecut-waikon ashenah menouqtin pahwepemuk-kasho nabgosing.
The breath of thy mouth is as sweet as the fragrance of flowers in the morning—sweet as their fragrance at evening in the moon of the fading leaf.

Nekaugewahnaitahsee neshalinomen abchewaukee, ashenah mokeketchevun kezhis aschew au wahsekoseekasho?
Does not the blood of my veins spring towards thee like the bubbling springs to the sun in the moon of the bright night?—(April).

Nemeceta's nuggahna taupai keeshlah payshoo ashenah oke-noga meteequon weneemenin nodin otalhiminkasho.
My heart sings to thee when thou art near like the dancing branches to the wind in the moon of strawberries. (June).
Taupai nicaudize saugittewun, nemeceta muccudduwah ashenah wahlskash sebewun taupai nahcut endosh wainje lahmping.

When thou art not pleased, my beloved, my heart is darkened like the shining river, when shadows fall from the clouds above.

Kutiyahnim gozhetone monenandum, nemeceta suannugesev ashenah kezhis gozhetone ashenah asauwahshouah te-gowugainse kisenah nodin wainjenetahhahwajink.

Thy smiles cause my troubled heart to be brightened as the sun makes in look like gold the ripples, which the cold wind has created.

Neshwena, wahlundummo, keshalnon nemeceta pokkaume-nin.

Myself! behold me! blood of my beating heart.
Ah ke tahyahnim, nepesh tahyahnim, lahmping tahyahnim—knoweth none!—Nemah kaukekendun mekuunuh tahyahnim uokeshce taupai kaukeshlah—Onaiweh! Onaiweh! aoush saugittewun!

The earth smiles—the waters smile—the heavens smile, but I lose the way of smiling when thou art not near—awake! awake! my beloved.

Have you no poetical friend who will throw this designedly literal but very bald English translation into a happier dress?—*Adios.* H.

THE PILGRIMS OF THE RHINE, by the author of Pelham. 1 vol. New York: HARPER & BROTHERS.—Published originally in England, with all the splendor of an annual—adorned with most exquisite engravings of the Rhine scenery—we can hardly conceive of a book more calculated to win its way among the imaginative than this. Even in the ordinary and unadorned form in which it is presented to the American reader, there is that in its free and fervid fancy and discursive topics, which imparts to it a wonderful charm. But we are talking, we dare say, about a book which already the greater portion of our readers have devoured, but which we have only just now found time to look into. We will therefore only add a few detached passages—meaning hereafter to present many more.

Behold, throughout the universe, all things at war with one another, the lion with the lamb, the serpent with the bird; and even the gentlest bird itself, with the moth of the air, or the worm of the humble earth. What then to men, and to the spirits transcending men, is so lovely and so sacred as a being that harmeth none, and what so beautiful as Innocence? what so mournful as its timely tomb? and shall not that tomb be sacred? Shall it not be our peculiar care? May we not mourn over it as at the passing away of some fair miracle in nature; too tender to endure, too rare to be forgotten?

The prose of the heart enlightens, touches, rouses far more than poetry. Your most philosophical poets would be commonplace if turned into prose.—Childe Harold, seemingly so profound, owes its profundity to its style, in reality it contains nothing that is new, except the mechanism of its diction. Verse cannot contain the refining subtle thoughts which a great prose writer embodies; the rhyme eternally cripples it; it properly deals with the common prob-

lems of human nature which are now hackneyed, and not with the nice and philosophizing corollaries which may be drawn from them. Thus, though it would seem a paradox, commonplace is more the element of poetry than of prose. And sensible of this, even Schiller wrote the deepest of modern tragedies, his Fiesco, in prose.

It is perhaps for others, rather than ourselves, that the fond heart requires an Hereafter. The tranquil rest, the shadow and the silence, the mere pause of the wheel of life, have no terror for the wise, who know the due value of the world—

"After the billows of a stormy sea,
Sweet is at last the haven of repose!"

But not so when that stillness is to divide us eternally from others; when those who have loved with all the passion, the devotion, the watchful sanctity of the weak human heart; are to exist to us no more. When after long years of desertion and widowhood on earth, there is to be no hope of re-union in that In-visible beyond the stars; when the torch not of life only, but of love, is to be quenched in the Dark Fountain; and the grave that we should fain hope, is the great restorer of broken ties, is but the dumb seal of hopeless—utter—inexorable separation! And it is this thought—this sentiment, which makes religion out of wo, and teacheth belief to the mourning heart, that in the gladness of united affections felt not the necessity of a heaven. To how many is the death of the beloved the parent of faith!

Life has always action; it is our own fault if it ever be dull; youth has its enterprise, manhood its schemes, and even if infirmity creeps upon age, the mind, the mind still triumphs over the mortal clay, and in the quiet hermitage, among books, and from thoughts, keeps the great wheel within everlastingly in motion. No, the better class of spirits have always an antidote to the insipidity of a common career; they have ever energy at will.

For action is that Lethe in which we alone forget our former dreams; and the mind that, too stern to wrestle with its emotions, seeks to conquer regret, must leave itself no leisure to look behind. Who knows what benefits to the world may have sprung from the sorrows of the benefactor? As the harvest that gladdens mankind in suns of autumn, was called forth by the rains of spring, so the griefs of youth may make the fame of maturity.

There was a certain vastness of mind, in the adoption of utter solitude in which the first enthusiasts of our religion indulged. The remote desert, the solitary rock, the rude dwelling hollowed from the cave, the eternal commune with their own hearts, with nature, and their dreams of God, all made a picture of severe and preterhuman grandeur. Say what we will of the necessity and charm of social life, there is a greatness about man when he dispenses with mankind.

There is something in travel which constantly even amid the most retired spots, impresses us with the exuberance of life. We come to these quiet nooks, and find a race whose existence we never dreamed of. In their humble path they know the same passions and tread the same career as ourselves. The mountains shut them out from the great world, but their village is a world in itself. And they know and need no more of the turbulent scenes of remote cities, than our own planet recks of the inhabitants of the distant stars.

SUMMARY.

The following persons are elected Directors of the New York Athenæum for the ensuing year:

James Kent, John McVickar, James Renwick, Isaac S. Hone, John A. Stevens, Samuel Ward, Benjamin W. Rogers, Francis Olmsted, James Heard, John Delafield, Stephen C. Williams, Gulian C. Verplanck, William Beach Lawrence, Peter Schermerhorn, J. Augustine Smith, Edward W. Laight, Joseph Kerochan.

[From the Tuscaloosa (Alab.) Intelligencer.]

CHURCH AND TABLE.—We cannot let a good domestic joke pass, even if it should be at the expense of our own town. It is known to all who have visited Tuscaloosa that the place is famous for bells.—There are five taverns, each of which is supplied with a clamorous bell, to invite its guests at the proper time to the table. There are also three churches that have very large bells. A reverend divine, speaking of the taverns, observed on a late occasion, that there was a more fine ringing of bells, and less good eating, in this place, than in any place where he was acquainted. Yes, said a tavernkeeper, who stood by, and it is just so with the churches; there is more ring of bells for church, and less good preaching, than in any place I ever lived.

We do not ourselves acknowledge the justice of

either remark; except as to the ringing of bells.—That we have rather an oversupply, especially on Sunday morning, cannot be denied.

THE BALMY MONTH OF MAY.—For the last week the weather has been cold and gusty. On Tuesday night ice was formed in the vicinity of the city, and last night a violent and cold storm of rain, was succeeded by a slight fall of snow—and this morning at sunrise there was in the upper parts of the city ice of the thickness of a dollar.

The poets who have celebrated the charms of May lived in a different climate.

ONE DAY LATER intelligence from England has reached us, by the ship Nimrod, from Liverpool, but nothing of interest is added to former accounts.—Spain is said to have decided on an armed movement in favor of Donna Maria, but nothing decisive is given. No change in markets.

Col. Tewson, whom to name is to praise, has been confirmed by the Senate as Paymaster General.

R. W. WIER, of this city, whose taste and skill as an artist are only surpassed by the excellence of his character, and his fine social qualities, has in like manner been confirmed by the Senate, as Professor of Drawing at Westpoint, in the place of C. R. Leslie, resigned.

THE NEW YORK INFANT SCHOOL SOCIETY.—This Society met in Chatham street Chapel, on Saturday at 11 o'clock, an immense multitude attending. The scholars of three District Schools were present, averaging generally from four to seven years of age, and some less than four. The meeting was opened by the singing of a hymn by the different scholars, which was followed by prayer, when the Seventh Annual Report of the Society was read, which spoke of encouraging prospects, and of considerable increase in numbers of the scholars. From this it appeared that the number of scholars in the Infant Schools of this Society are 460, and in all other Societies in the city, including this, 2,880, besides which there are 17 primary schools, with 1700 children, and a number of private Infant Schools, not associated with this or any other Society. The examination of the pupils in spelling, reading, singing, and in catechism, or Scripture facts, then proceeded, and gave evidence of the astonishing amount of knowledge they had acquired, for infants of their age. A few then recited and went through a number of elliptical lessons on the oriental plan; then they sung several hymns, and afterwards followed the benediction.—[Daily Adv.]

[From the Jacksonville (Ill.) Patriot, April 26th.]
THE GALE.—On Monday night last, (21st.) at 12 o'clock, this town was visited by a violent tempest, which for a few seconds seemed to threaten the demolition of every building within its range. Happily, no personal injury was sustained, but the damage to individuals, in the destruction of property, was considerable.

The Market House, on the Public Square, entirely demolished.

The new Brick Jail, attic story, do. do.

A new two story frame, near the Tan Yard, do. do.

A one story brick Blacksmith's shop, occupied by Mr. Philips, do. do.

A new two story frame building belonging to Wm. Hunter, opposite the jail, was moved between one and two feet from its foundation, with loss of chimney.

The large stable, belonging to Col. Miller, unroofed and otherwise injured.

The chimneys of Dr. Gillett's house blown down, together with the roof of his stable.

The roof of Widow Barton's Kitchen, blown off.

The workshop of Theodore Barton, demolished.

The roof of Widow Johnson's house, injured, with loss of chimney.

Chimneys attached to the houses of Messrs. Rockwell, Brockenbrough, Scruggs and a few others, blown down.

The Tinner's Shop of Mr. Catlin, considerably injured.

The brick wall of a new house, belonging to Mr. Seymour, demolished.

The attic story of a new frame, belonging to Mr. Allen, together with the chimney, blown down.

In addition to the above, many stables were unroofed, and considerable damage was done to out-houses, window sashes, &c. &c.

The house of Mr. Coddington was struck with lightning, during the storm, but no material damage was done.

We are happy to hear that but little injury was sustained in the country.

It appeared almost impossible to trace the course of the wind, the morning after the disaster, on account of the opposite directions in which the fragments were deposited. For instance, one half the roof of a stable near the centre of the town was carried several feet in a northwest direction, while the other half was carried in a northeast direction. We are inclined to think that in addition to the gale, there was a whirlwind, which, owing to the strong current of wind passing through so narrow a space was probably formed in the valley between the high land on College Hill and the Diamond Grove.—Meeting with no great obstruction until it reached about the centre of the town, it apparently met the strong current of the gale, from the S. S. E. and there in the destruction of the Market House and other substantial buildings, may be seen the last struggles of this tremendous storm.

[From the New Bedford Mercury.]

The following extract from a table in Brown's Sylva Americana, will be found valuable to housekeepers, in aiding them to form an estimate of the comparative value of the different kinds of fire-wood.

The table at large shows the weight of a cord of different woods, seasoned; the quantity of charcoal each will make, and other valuable information, founded on experiments. It assumes as a standard the shell-bark hickory, of which none is offered in our market. The most valuable which is common in this region is the White Oak, and assuming this to be worth six dollars per cord, we find the price affixed in the table to be the value of each.

	Lbs. in a cord.	Comp. value.
1 Shellbark Hickory,	4469	100 \$7 40
2 Pignut Hickory, } common Walnut, }	4241	95 7 63
3 White Oak,	3821	81 5 00
4 White Ash,	3450	77 5 70
5 Swamp Whortleberry,	3361	73 5 40
6 Scrub Oak,	3339	73 5 40
7 Appletree,	3115	70 5 18
8 Red Oak,	3254	69 5 11
9 Black Oak,	3102	66 4 89
10 White Beech,	3236	65 4 81
11 Black Birch,	3115	63 4 67
12 Yellow Oak,	2919	60 4 44
13 White Elm,	2592	58 4 29
14 Maple,	2668	54 4 00
15 Buttonwood,	2391	52 3 85
16 Spanish Oak,	2449	42 3 85
17 White Birch,	2369	48 3 56
18 Pitch Pine,	1994	43 3 18
19 White Pine,	1868	42 3 11
20 Lombardy Poplar,	1774	40 2 96

So much for the purchaser—and now a word to the seller.

It is estimated that a cord of wood contains when green 1543 lbs. of water; so that a farmer who brings into market a cord of green wood, has no less load for his team, than another who should put on the top of his cord of dry White Oak, three quarters of a cord of seasoned pine, or one hoghead and two barrels of water; either of which would seem like overburdening his poor beasts.

[From Williams' New Register.]

AUCTION DUTIES.—The total amount of sales by auction, in this State, (nearly all in this city,) in the year ending Sept. 30, 1833, was \$34,392,320 35.—The auction duty paid to the State in the same year, was \$238,719 45, of which sum, \$236,924, was paid by auctioneers of this city, as follows, (omitting the odd cents,) viz:

David Austen	52,924	John Pearson	80
Lindley M. Hoffman	34,185	Allen Smith	61
Henry L. Patterson	22,587	L. Power	56
Thos. W. Pearell	18,010	Thos. P. Bowne	46
Edwd. G. Thompson	15,790	Jas. C. Smith	43
Wm. Timpson	15,654	Win. J. Brown	37
R. R. Miltum	8,992	A. L. Fontaine	33
Rich'd Lawrence	8,751	Wm. McLaughlin	27
Jos. W. Corlies	8,043	Jacob Van Winkle	23
A. W. Bleeker	7,932	John Fellows	23
Samuel Phillips	6,333	S. Selas	22
Wm. Girard	5,534	Thos. Bell	21
Henry Hone	4,544	Thos. Austen	19
Dun's Sparks	2,290	Geo. S. Mann	18
G. M'Kay Morrell	1,784	J. P. Deltcher	16
J. J. Bedient	1,137	S. M. Isaacs	15
A. B. Nunes	760	A. Sergeant	14
Wm. McDonald	596	Jos. Damon	13
A. Levy	463	J. Langdon	7
Wm. D. McCarty	313	A. A. Waterhouse	3
Wm. G. Bull	135	Rich'd Crawford	2
Jesse Cady	121	Gilbert Lewis	1
Cornelius Agnew	121	J. T. Dougherty	1
S. P. Ingraham	91	Jas. Goutray, 21 cents	

Total amount, \$236,924.

Captain Hodge, arrived at New Bedford, informing that there was an insurrection at Callao; and bombarding from Bonavisto, Callao, and Lima—caused, it was supposed, by the then President.

GREAT DIVIDEND.—The American Insurance Company have this day declared a dividend of Twelve per cent. out of the profits of the last six months, payable on the 1st June.

[From the Mercantile Advertiser.]

SPONTANEOUS COMBUSTION.—It is not generally known that oil in cotton, wool, or linen, may produce spontaneous combustion, and that very destructive fires have had this origin. A number of such instances are well known to the Insurance Companies. It is important that the community should be better apprised of the danger, that they may guard against it. We are informed that an extensive importing house in this city recently had a quantity of sheet iron cleaned of rust by rubbing it with pieces of linnen cloth dipped in oil. After the work was done the pieces were thrown together in a corner. The next day they were accidentally discovered to be on fire, and just in time to prevent the communication to articles near by. Had the combustion taken place at night, it is probable that the whole building, and a very valuable stock of merchandize, would have been enveloped in flames, and perhaps entirely destroyed.

CONVENTION OF INDEMNITY WITH FRANCE.—We copy from the National Gazette, of yesterday, two interesting articles respecting this Convention, of which the effect has been—suspended only we hope—by the refusal of the Chamber of Deputies to vote the money for satisfying the American claims

[From the National Gazette.]

Extract of a Letter from General Lafayette to his correspondent in this city, dated April 2.

"It is with the deepest affliction and with the liveliest displeasure that I write to you, and to you alone, on the subject of what happened yesterday; the American treaty was rejected by a majority of a few votes. M. de Broglie very honorably sent in his resignation this morning; General Sebastiani, the author of the treaty, has done the same. You will be, as I have been, surprised to see that several members of the *cote grache* have sided against the treaty. I am still sick, but with a fair way of recovery, provided I do not commit any imprudence; that danger, however, would not have prevented me, as you may well suppose, from appearing in the House; but my friends used so much argument to dissuade me from going, that I, at last, was obliged to yield. It is best, perhaps, that I should repress the expression of my feelings upon this subject; I shall therefore speak of my sentiments for you, &c."

DEBATE ON THE AMERICAN TREATY.

(Translated from a Paris newspaper.)

Mr. George Lafayette rose to speak on a personal subject. (Attention.) I have been, said the honorable member, so clearly designated by the member who spoke last, that I think myself entitled to request of the Chamber a moment's attention. I do not rise to defend the Commission, of which I had the honor to be a member, from the charge of being under any influence whatever, while deliberating on the important subject committed to it; but I wish to state a matter of fact, on which I find there is some misapprehension. My father was not a member of that Commission; I, alone, was one of the Commissioners. Surely, I did not pretend to exercise there any personal influence; but the strength of my conviction was not sufficient to induce the majority to agree in opinion with me, and I remained in the minority, though strongly convinced that there was more due to the United States, than the majority were willing to grant.

Mr. Jay, the reporter of the Committee, then rose, and in support of the Bill of Appropriation, he read a letter, addressed to him by General Lafayette, (detained at home by sickness,) in order to prove the good faith of the United States. The letter is in these words:

"While I regret that I cannot take part in the debate respecting the American Treaty, the almost unanimous report of the Committee, and the more profound knowledge acquired during this year respecting this great interest, in which justice, policy, commerce, and the freedom of the seas are involved, render it useless for me to repeat the observations, which I made at the last session, but there are facts, which I might have attested as a witness, and which

I now submit to my honorable colleague, the reporter of the Committee.

"1. I know that the date of the repeal of the Berlin and Milan decrees, is anterior to the seizures and destructions for which an indemnity is claimed I was myself the bearer of a message on the subject.

"2. Although the United States are the only power that remained unconnected with the coalitions against France, an offer was made to them by the allies, then all powerful, to join their claims to those which they preferred, and the payment of which they obtained. That offer was worthily declined by Mr. Crawford, the American Minister at Paris. He declared that the United States, far from making common cause with the enemies of France, would wait until their accounts could be settled as between friends.

"3. I saw Mr. Barlow set off for Wilna in the full conviction, from the correspondence of the Imperial Cabinet, that the American claims should obtain a favorable decision; and at the moment of our Revolution of July, Mr. Rives thought himself sure of terminating his negotiation, even with the Ministry of the Restoration; which, nevertheless, felt no obligation to the United States, for having remained the friends of France, while France was in friendship with her enemies.

"4. Among the classes of claims admitted in the Report, I do not perceive the *Antwerp Seizures*; although my memory was perfectly clear on the subject, I had recourse to the recollections of the Duke of Bassano, whose contemporaneous authority, in his situation at that time, is superior to any distant and posthumous assertion. I am then able to say, that no confiscation was decreed, and that the sale of the property had no other object than to prevent its deterioration; that there was a disposition to admit the justice of a claim, supported by the act of the government itself, which, in short, considered the merchandise deposited in the *caisse d'amortissement*, as *American property*, which makes an additional sum of more than two millions, without reckoning the *Maria* and her cargo, involved in the same measure.

"It is from these positive data, and others of the same kind, founded on the fact of monies, which, in my opinion, unjustly, but nevertheless, have entered into the public treasury, that even after allowing for the French claims, I had in my conscience, as an honest arbitrator, estimated the American claims at the sum of thirty millions, and this amount is not so unjustifiable as some have thought proper to say, while I yield all the honor due to the administration which has reduced the treaty to narrower limits."

[From the *Quebec Mercury*.]

THE BIRTH PLACE OF CHRISTOPHER COLUMBUS.

SIR:—To a native of this Continent, to which, however, by a strange injustice, posterity has not given his name, the birth-place of Columbus must always be an object of interest. A house is still shown in the village of Cogoletto, near Genoa, as that in which he was born. At the door of the building is a stone, on which the following inscription in Italian has been inscribed since 1650. It bears the name of a Priest of the same family. The two other inscriptions in Latin have been recently added. Like the birth place of our own Shakspeare, at Stratford-on-Avon, that of Columbus is visited by all curious travellers. Some time ago, a party made a pilgrimage to the spot, and entered the house in silence with their heads uncovered, regarding the birth-place of the great discoverer of the New World, as one of the most interesting sites of their route. I subjoin the inscriptions, and have attempted an imitation.—It will be perceived that in the Italian, there is a play upon the meaning of Colombo, which would be ineffective in the translation.

ELOGIUM.

Di Cristoforo Colombo, scopritore dell' America l'anno 1492—scritti nella casa di sua nascita, nel paese di Cogoletto, ontra-da Giuggiole:

I.

Con generoso ardir dall' arca all' onde
l'insolente il vol Colombo prende.
Corre, s'aggira, tennen' scopre, e fronde
D'olive, in segno, al gran Nido se rende.
L'imita in cio Colombo, ne s'accorde,
E da sua patria il mar solcando fonde;
Terreno al fin scoprendo disse fando,
Offende al' Ispano un novo Mondo.

113 Dicembre, 1650.

FRATE ANTONIO COLOMBO.

II.

Nonces sile gradum; Fuit H I Clux prima Colombo,
Orbe viro majori, Hen! nimis arcta Domus;

III.

Unus erat Mundus; Duo sunt, ait ISTE; fuerunt.
1626.

The above imitated:

IN PRAISE

Of Christopher Columbus, discoverer of America in the year

1492—written in the house of his birth, in the country of Cogoletto, in the district of Giuggiole.

Swift from the Ark, above the watery waste,
The Dove, obedient, flies with generous haste;
Still onward speeds, nor pauses in her flight
Until the long sought land relieves her sight—
Thence as a token of the welcome strand,
An olive branch she bears to Noah's hand:
Like her Columbus scorns inglorious ease,
Far from his country ploughs the maiden seas—
Nor cast he anchor, nor a sail was furled,
Until to Spain he gave another world!

II.

Stay, traveller, stay! before these narrow walls
Awhile thy weary pilgrimage restrain—
Here first Columbus breath'd the vital air:
This roof held out—the world could not contain!

III.

The world was one—Columbus said, they're two—
He found a world, and made the saying true!

I am, Sir, &c.,

J. C. F.

QUEBEC, APRIL 12, 1834.

"Gather them to their graves again,
And solemnly and softly lay
Beneath the verdure of the plain
The warriors' scattered bones away."

Among the disclosures made the past week in excavating the vault for the new Presbyterian Church on the site of the ancient burial ground in this city, was a coffin supposed to contain the remains of the gallant Major Holmes. This brave officer, it will be recollected, was killed in the assault on Fort Mackinac in 1814, while forming his men for a charge under the very batteries which the British had erected, and which, despite his fall, were carried at the point of the bayonet. His body, together with that of Captain Van Horn, who was mortally wounded at the same time, was the next morning obtained under a flag of truce, and despatched down the Lake for interment. Van Horn is said to have been buried at Fort Gratiot, while the body of Major Holmes in a coffin heavily loaded with balls for the purpose of sinking it, should accident induce the necessity of its being thrown overboard, was conveyed hither.—These facts were communicated by an old resident of the place, who imagined he identified the body from the circumstance that a quantity of cannon shot together with a military stock were found in the coffin.

There were other evidences appealing loudly to the sympathies of both young and old, and which vividly recalled to the youthful bystanders the tales of bolder horrors and the perils of the frontier so often listened to with shuddering as they sat on the knees of their fathers. The chests containing the bones of a part of the chivalrous but unfortunate Kentucky corps so barbarously butchered at the River Raisin, were likewise exposed. Many of these skulls exhibited appalling marks of the atrocities of savage warfare, being both perforated with bullets, cleft with the broadsword, and hacked with the tomahawk. The fate of this detachment which embodied within it the young volunteers from Lexington, composed of the flower of that city, under the command of Capt. Hart, created an excitement, which, rife as was that epoch with scenes of horror, has scarcely been equalled by any event in the bloody annals of the past. A few bodies only were rescued by friendly interposition from the mingled heaps of the wounded, the dying and the dead, which, notwithstanding the capitulation, were first wantonly riddled with balls and mangled by the knives of the Indians and afterwards burnt in heaps in their cantonments. These few were sometime after raised from their secret graves, and brought to Detroit, where they were again interred with the respect due to the brave but ill-fated soldier; and an appropriate tribute to the honored dead was paid them in the eloquent and pathetic address pronounced on the occasion. Their remains have now been removed to the upper cemetery of this city.—[Detroit Courier.]

[From "Tutti Frutti" of Prince Puckler Muskau.]

A REMARKABLE CHARACTER.—It is by no means necessary to travel far in order to meet with something remarkable. During a visit which I lately made to Leipzig (says the Prince) for the purpose of seeing my much-esteemed friend the Prussian General Baumgartner, I met at his table a highly interesting person, whom I beg leave to introduce to the acquaintance of my readers.

He was no other than the French captain of the guards, Dr. Emir, Chan Alcibiades de Tavernier, grandson of the celebrated traveller of that name, and himself even a greater traveller than his renowned ancestor.

Having been restored to health from severe wounds which he had received in the great battle of Leipzig, M. de Tavernier resolved to renounce the military career, and, in pursuance of a long cherished incli-

nation, to devote himself to the study of medicine and surgery.

Having completed his studies, he commenced his extensive travels in Africa and Asia, especially through Egypt, Abyssinia, Syria, Arabia, Persia, the ancient empire of the Great Mogul, Armenia, and by far the most remarkable portion in the vast and almost entirely unknown regions of Central Asia, as far as the wall of China. Thence he traversed Chinese Tartary to Kiachta, and at last returned, by way of the new Russian military road through Siberia, to Europe, where he had the misfortune to suffer shipwreck as it were in sight of port. On approaching the gate of Bucharest, where he at present resides, he was attacked by a band of robbers, who carried off the greater part of his effects, collections, and papers. With his son, a boy of ten years of age, who fired a gun from the carriage at the leader of the band, and killed him, he was left almost lifeless on the spot; he was wounded in ten different places, and recovered slowly and with great difficulty.

The singular details of these travels, which often seem to border upon the marvellous, surpass in variety the most interesting romance, while they promise the most valuable acquisitions to science. At one time we see the hero, like Marco Polo, the favorite and minister of a mighty Tartar prince, and raised by him to a princely dignity; at another, devoted to a romantic passion for the pride of the harem of his new master, encountering the greatest dangers, and obtaining ultimate success; here commanding armies and giving battles; there, again, appearing as the leader of savage hordes, among which he discovered the aboriginal breed of the horse of Central Asia, which is said to excel all the Arabian races; and, again, inventing a new conductor, which seems destined to supersede that of Franklin.

As we hope soon to be favoured with a more detailed account of this distinguished traveller from his own pen, we shall content ourselves (and this chiefly for the purpose of drawing the attention of the public to the work itself) with adding merely a few general particulars respecting Dr. Tavernier.

The principal object that induced him to visit the same quarter of the globe which had illustrated the life of his grandfather, was to form, by accurate personal observation, a fixed system on the nature of the plague and similar disorders. According to the opinion of Dr. Tavernier, if we rightly comprehend it, the ground of the form which it assumes may be considered as lying more in the juices of the body itself than as originating in contagion, which is rather only the occasional cause of the *manifestation* of the disease; "for," he says, "I have more than once seen contagion produce, in the same forms of disease, here the yellow fever, there the plague, and there the cholera, merely according to the difference of the *individual dispositions*. For this reason I even then called that singular scourge *le fleau tricephal*; when I, at the same time, discovered in the mountains of Mongolia, which no European had ever before visited, the secret that snow and ice are the real specifics against every form of this disease; and I there delivered entire hordes from it, merely by leading them from the plain into the middle icy regions.

"Surrounded by those sublime scenes of nature, proud and happy at one of the most salutary discoveries for the welfare of the human race, I wrote in my memorandum book the lines which my friends have placed under my portrait, lithographed at Leipzig:

Aux montagnes de la Mongolie,
Je vis, dans vos frimas, l'ame du feu vital,
Et lui du foudroyer le fleau tricephal . . .
Dei ama benedicta et penibile carriere,
Put desormais briller d'une douce lumiere."

It was principally among these mountains, and on the eastern bank of Lake Aral, that the doctor convinced himself that ice is the true antidote against contagion of every kind; and he has since applied it in innumerable cases, not only in the above mentioned disorders, but also in epilepsy, typhus malignant, bilious and nervous fevers, nay, even in hydrophobia.

He affirms, it was owing to this system alone that the Vienna physicians: ely succeeded in saving the young King of Hungary, as he himself had opportunities, while the cholera raged in Vienna and other cities, to convince the most incredulous of the surprising and happy effects of his mode of treatment. He therefore complains bitterly, that so many who have stolen his system, without fully comprehending it, have taken good care not to acknowledge the source to which alone they are indebted for it. This, however, he does not regard; as his object was far less personal renown and advantage, than the welfare of his fellow-creatures, to promote which he devoted his whole life, and had encountered, not without honor, so many dangers.

EXTRAORDINARY AND DESTRUCTIVE TORNADO IN VIRGINIA.—The Petersburg Intelligencer, of Thursday last, gives the following description of a tornado and its effects, that occurred the Monday previous.

The most terrific tornado ever witnessed in this part of Virginia, occurred on Monday last. The destruction of human life and property of every kind is truly appalling. It would be impossible to give more than a faint outline of its desolating fury. The scene is represented by those who had an opportunity of witnessing it, as one of surpassing and inexpressible grandeur and sublimity. Every thing, within its range, was laid prostrate; the largest trees were torn up by the roots and carried a considerable distance; dwelling and out houses were levelled with the earth, and their fragments scattered in every direction.—The day had been cloudy, with occasional showers. About 3 o'clock the clouds assumed a black and lowering aspect: in a few minutes after, the whirlwind commenced its ravages. A correspondent who witnessed its violence, says, "it was in the form of an inverted cone, and every cloud near seemed to rush into the vortex. As it approached, you might see the limbs of the forests careering through the darkened air. Its duration, at any point, was not more than one or two minutes." Its general course was from West to East; its width varied from two hundred yards to half a mile; and, from what we have already heard of its destructive march, its extent could not have been less than seventy miles. The following details will, we fear, present but a very imperfect sketch of its devastations.

A gentleman writes us that the tornado "appears to have commenced in the county of Lunenburg, near Hungry Town, where almost all the heavy timber was torn up by the roots, and where it proved very fatal. Near this place, it seems that the poor (who lived in log houses) were the principal sufferers, several negroes and children being killed. Hence it passed by Nottoway Courthouse, where the storm instead of abating increased—the public road being rendered utterly impassable. From Nottoway Courthouse, or near that place, the wind passing in a North-east direction, reached the plantation of Mr. R. Fitzgerald, where great injury was done, but no lives lost. Near his residence was that of Mr. John Fitz, who suffered immensely, having one negro killed, another's arm broke, and various others injured. Hence it pursued the same course to the house of Mr. Justice, where great injury was likewise sustained, several persons severely injured, and the life of one despaired of. The next death was that of Mr. Joshua Hawks, an honest, upright citizen, who was literally crushed, his wife at the same time receiving injury so severe, as to leave but little hopes of recovery.

The next place from whence we have any authentic particulars, is Curtis's (formerly Reese's) on Cox Road, where the storm appears to have been equally destructive. Mr. Curtis writes us "that every house on Mr. Herbert Reese's plantation, except his dwelling house, was blown to atoms; Mr. Frank Reese, the Overseer, and 3 negroes, lost their lives; several other negroes badly crippled; his wagon, which was nearly new, was hurled to atoms, even the wheels broken in fragments, and the hubs blown two or three hundred yards. Mrs. Jincy Crowder had every house on her farm (dwelling house and all) torn to pieces. Old farmer Reams lost every house except his dwelling house. No lives at either of the two last named places. I understand from a gentleman traveller that it passed on in the neighborhood of Col. Jeter's. Several lives lost in that neighborhood. I also hear that it has done considerable damage in the neighborhood of Thos. Jordan's, with the loss of lives, &c. It appears that it passed from west to east near on the north side and nearly parallel with Cox Road."

We have no certain accounts of the ravages of the tornado after it passed the neighborhood of Curtis's, until it reached the plantation of Mr. Wm. E. Boisseau, about four miles from town. The scene at this place baffles every attempt at description.—Here its desolating fury spared nothing. The dwelling house, kitchen, barn, &c. were entirely demolished, and their timbers, plank, &c. separated into fragments and scattered over the farm in every direction. Nothing is left to mark the site of the dwelling house but a small portion of the brick foundation. The family escaped from the house, and attempted to take refuge in the garden, but were overtaken by the whirlwind, and knocked down by the flying wreck of their former dwelling. Mr. B's brother, a fine youth of about 14 years of age, was killed: and Mr. B., his wife, and four other inmates of his family, were wounded, though not dangerously. In the negro quarters the injury was equally

severe—one woman was killed, and six or eight others were wounded, one very dangerously. The loss sustained by Mr. B. is very great. The persons who have subsequently visited the place describe it as though the genius of destruction had made it his temporary abode.

From Mr. Boisseau's it passed along near the Southern boundary line of this town, without doing much injury until it reached the plantation of Mr. Augustine Burge in Prince George. A friend has given us the following account of its devastations in that direction: "At Mr. Augustine Burge's it blew down his stable, and almost all his negro houses; fortunately no person was killed, but several were slightly hurt. At Hall's Field, the plantation of Mr. Wm. Baird, every house was blown down except the dwelling, a two storied house near it, a kitchen or two, and the machine house. The Wagoner, John, a faithful servant, was killed in the woods by the falling of a tree; the two horses in the wagon were likewise killed. At Hickory Hill, the residence of Mr. Wm. Shands, jr. a cotton gin, a stable and kitchen were blown down. There were two negro men in the kitchen, both of whom were badly hurt;—one of them was carried with the wreck of the house at least fifty yards. So tremendous was the storm, that, from Walnut Hill, Mr. J. V. Wilcox's country residence, to Preston, the residence of Mrs. Ann Thweatt, you have a vista scarcely interrupted by a solitary tree, a distance of four or five miles.—The forests, too, through which the tornado passed, were wooded with as majestic a growth as can be found probably in Virginia."

At Preston, the residence of Mrs. Ann H. Thweatt, there is not a house except the dwelling and one small out house left standing. One negro was killed and ten or twelve wounded. A gentleman who has seen the effects of the storm on this plantation says, that it presents the appearance of having been visited by a heavy freshet.

We have no further particulars of its progress to the East, but we learn that it crossed the James river, between Tarbay and Coggins' Point.

STATE OF SPAIN.

[From the London Courier, of 2d April.]

The state of Spain is anomalous; no less so, because of the anomalies of the Spanish character; (and these, Heaven knows, are strong enough,) but also, because of the peculiar circumstances which have led that country into an unintended, and, therefore, imperfect revolution.

The French *Juste Milieu* stands upon a large base, whether a solid one or not, is a question which time only can solve. But, whether it be called the monopoly of a too restricted, and nearly oligarchical constituency, or the legitimate influence of the most wealthy and intelligent part of the French nation, it is equally certain that the Government, which is nevertheless representative of a party, rests upon the majority of the electors and National Guards, and, with few exceptions, upon the monitored interest. Now, is that the case in Spain? Is there in that country anything settled, whereon a Government of the *Juste Milieu* can be founded? We think not.

We must not dissemble one thing. The Crown in Spain is in abeyance. It was one of the best sayings of Napoleon, that "*thrones were but a few boards and a piece of velvet*," and now, the Spanish crown is a mere empty bauble.

The title of the young Queen to the throne is a dubious one. True it is, that by the ancient laws of Spain, the rights of the females to the succession were acknowledged; and it is equally true that the Cortes of 1789, petitioned that the Salic law, introduced into Spain by Philip the Fifth, should be repudiated. But then, on the other hand, the acts of the Cortes of Philip the Fifth, in favor of that Salic law, was a valid one, and published as such, whilst the act of 1789, lately alluded to, though, it is said, agreed to by the King, had not been published, and can hardly be considered as a law.

It is no less certain that the Cortes of 1810 declared in favor of the female succession, but their decision is of no value in the eyes of Ferdinand's widow and daughter, by whom that famous and patriotic assembly is still viewed, at least officially, as no better than a revolutionary and illegal power.

Even the meeting of the mock Deputies of the Spanish nation in 1833, though intended to sanction the title of the young Princess, had a tendency to render it still more dubious than it was before. By precluding the discussion of it, the Spanish Government seemed to fear that the decision might, nay probably would, be unfavorable to its own views, and by a curious infelicity that ludicrous assembly met, we may say, to enter a silent protest against

the act, the sanctioning of which was the ostensible object of its convocation.

The consequence of such an accumulation of blunders and follies, which might have been anticipated, are most unfortunate. By a large party of the Spanish nation, Don Carlos is considered to be the legitimate King of Spain. And we are not rash in saying that among the supporters of the young Queen, a large portion care but little about her title, and look upon her as a rallying word—a motto or a banner under which the battle of the *good old cause* of the Constitution against the ancient despotism is to be fought over again.

But if the title of the young Queen of Spain is liable to objection, the situation of her mother, the present Regent, to whose lot it had fallen to enforce and support the rights of the Royal infant, is eminently calculated to embarrass and endanger the cause of female succession. Regencies, particularly under a despotic form of government, are proverbially weak and unsettled. The government of a female and a foreigner seldom commands respect or popularity.—There is besides in Spain a prejudice against Italian Princesses. The effects of all this are already felt. There are *ugly reports* abroad which we do not believe, on the principle of our laws, which forbid us to look upon an individual as guilty until after conviction, founded upon convincing evidence. Yet, admitting those loud whispers to be foul calumnies, they are not the less likely to be attended with injurious consequences. The reported levities of Marie Anoinette, whether the reports were totally false or only exaggerated, had a very important share in her own misfortunes and those of her husband and family. The present regent of Spain has done little to enlist in her favor the feelings of any party in Spain. The Queen Regent should be like Cesar's wife; for, to be suspected, is, in her case, as far as that can influence the public mind, for all practical purposes, tantamount to being guilty.

Don Carlos is differently situated. Of talent and energy he has been found hitherto sadly deficient, and yet his popularity among the Spaniards is even unto this moment unimpaired. He is still supposed to be a man of strong principle and sound public and private morality. He undoubtedly possesses many, and is held to possess all the qualities that best suit the ruler of a grave and religious people. Unlike his departed brother, his sincerity never was nor is doubted. Those virtues which he may want, he receives credit for, and upon that credit he can largely draw upon the resources and zeal of an enthusiastically devoted population. During the Peninsular war the bright halo which surrounded the distant Ferdinand, made him appear in the eyes of his subjects as a being invested with more than earthly perfection. His inglorious captivity within the walls of Valencay was mainly serviceable to the triumph of Spanish Independence. In that respect Don Carlos has now succeeded his brother, and is in full possession of the benefits of a succession of which no law can deprive him.

When we take all those things into consideration we shall see that the Pretender to the Spanish throne has some chance of success. We know that such is the view entertained, by those—good judges, too—who were heretofore inclined to think otherwise.—One European Government, which has hitherto shown great zeal for the cause of the young Queen, betrays present symptoms of a contrary tendency, be it owing to want of faith in her power, or to dislike of a cause which must become connected with that of political liberty. The announced dispersion of the French army stationed on the Spanish frontier is truly a most unaccountable measure, unless it be meant to assist the Spanish Carlists, since the reasons which led to the assembling of that body are still subsisting, as the rebellion in the Spanish provinces is far from being subdued.

We are far, however, from despairing of success to the cause of the Queen. She has some favorable circumstances on her side, which only the folly or guilt of an imbecile or designing administration can render unavailing. It is no mean advantage to be in possession of the actual powers of the Government, particularly when we consider that the Constitutionalists of 1820, notwithstanding a strong opposition both at home and abroad, were enabled to keep their ground, till the insurgent Royalists brought in an overwhelming French force on their own side.

The Queen Regent can now depend on a larger party than the old Constitutionalists were able to command, provided she knew the way to form and consolidate it. In the list of her supporters we find the names of Quesada, Llauder, and Morillo—that is to say, a leader of the Royalist Army of the Faith, a moderate though still a steadfast Royalist, and a deserter from the Constitutional cause, in addition to

all the staunch and unfortunate defenders of the fallen Cortes. These men, heretofore, and perhaps even now, disagreeing in principle, are yet bound together by the strong tie of common interest. There is no salvation for them except in the triumph of the Queen's cause, and that cause cannot be saved except by its being identified with that of free institutions.

A farther and strong chance in favor of the Queen may be found in the conduct of her adversaries.—Had they left the Constitutionalists alone, perhaps the Regent could not at present rely upon their support, which indeed she never did nor does now deserve. But the blind fury and party zeal of the Carlists made it a necessity for the intended victims of a forthcoming and clearly denounced persecution, to arm themselves in their own and the Queen's defence.

The Regent of Spain and her ostensible and real advisers must be blinded indeed if they do not perceive their true situation, or if they neglect to improve those chances of success which they still have on their own side.

The path they have to follow lies clear before them; there is no mistaking it; and let it be kept in mind that no other path is safe.

They must arm the Constitutionalists, and they must assemble the Cortes.

These are no metaphysical principles—no delusive theories—but, on the contrary, practical questions, which involve security for life, for limb, and property.

It is a mere absurdity to talk about the qualifications for the national militia. Those men ought to be armed who are willing and ready to fight, and are likely to fight well.

Nor is the meeting of the Cortes a question of a less practical character. A bill of exclusion against the President and his offspring must needs be the first act of the Legislature. This is no time for idling and procrastinating, and closing the eyes to dangers that look upon you full in the face. Something more than the repeal of the Salic law and an insurance for two lives, is required by those men whose lives are threatened by an exasperated party. The doctrine of the sovereignty of the people may be disliked by many of the Queen's supporters, but they all must know what fate awaits them should the death of two infants place the legitimate power in the hands of Don Carlos.

The necessary consequences of such measures as are here urged may well be anticipated. They will be no less than the establishment in Spain of a representative government, whereby the liberties of the Spaniards, and the interests of the ruling party among them, may be secured and consolidated.

It is both to the enthusiasm for liberty, and the sense of security, that the Queen Regent of Spain must, and can only be, indebted for success. To the enthusiasm and rightly understood interests of her adversaries she must oppose the influence of equally solid and energetic principles. She has to appeal at once to the noblest, and the most vulgar passions—to call to her aid the patriotic zeal of the truly liberal, and the vigorous efforts of selfish interests threatened in their tenderest points. Let her appeal quickly to the devotedness of the patriot, and the common sense of the people, or she will perish, and leave behind her a name significant of folly, feebleness, and guilt, which will excite, perhaps, more than any name in history, indignation and contempt.

TOWNSEND & DUFFEE, of Palmyra, Manufacturers of Railroad Rope, having removed their establishment to Hudson, under the name of *Duffee, May & Co.* offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver there in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J. B. Jarvis, Eng. M. & H. R. Co., Albany; or James Archibald, Engineer Hudson and Delaware Canal and Railroad Company, Carbon date, Luzerne county, Pennsylvania.

Hudson, Columbia county, New-York, {
January 22, 1833.

NOTICE TO MANUFACTURERS.

SIMON FAIRMAN, of the village of Lansingburgh, in the county of Rensselaer, and state of New-York, has invented and put in operation a Machine for making Wrought Nails with square points. This machine will make about sixty 6d nails, and about forty 10d nails in a minute, and in the same proportion larger sizes, even to spikes for ships. The nail is hammered and comes from the machine completely heated to redness, that its capacity for being clenched is good and sure. One horse power is sufficient to drive one machine, and may easily be applied where such power for driving machinery is in operation. Said Fairman will make, vend and warrant machines as above, to any persons who may apply for them as soon as they may be made, and on the most reasonable terms. He also desires to sell one half of his patent right for the use of said machines throughout the United States. Any person desiring further information, or to purchase, will please to call at the machine shop of Mr. John Humphrey, in the village of Lansingburgh.—August 18, 1833.

Adopted by R.M. & F.

STEPHENSON,

Builder of a superior style of Passenger Cars for Railroad.
No. 264 Elizabethstreet, near Bleecker street,
New-York.

RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part of the New-York and Harlem Railroad, now in operation.
J 13 15

RAILROAD CAR WHEELS, BOXES AND AND OTHER RAILROAD CASTINGS.

Also, AXLES furnished and fitted to wheels complete at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to. Also, CAR SPRINGS.

Also, Flange Tires turned complete.

J8

ROGERS, KETCHUM & GROSVENOR.

NOVELTY WORKS,

Near Dry Dock, New-York.

THOMAS B. STILLMAN, Manufacturer of Steam Engines, Boilers, Railroad and Mill Work, Lathes, Presses, and other Machinery. Also, Dr. Nott's Patent Tubular Boilers, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited.



INSTRUMENTS.

SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

EWING & HEARTT, at the sign of the Quadrant, No. 58 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude.

For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewing & Heartt.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable.

They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES P. STABLER,

Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' Instruments of your Manufacture, particularly Spirit Levels, and Surveyor's Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These Instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

WILLIAM HOWARD, U. S. Civil Engineer.

Baltimore, May 1st, 1833.

To Messrs Ewing and Heartt.—As you have asked me to give my opinion of the merits of those Instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming acquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprise so well merits, I remain, yours, &c.

B. H. LATROBE,

Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them, upon application, to any person desirous of perusing the same.

LOCOMOTIVE ENGINES.

THE AMERICAN STEAM CARRIAGE COMPANY, OF PHILADELPHIA, respectfully inform the public, and especially Railroad and Transportation Companies, that they have become sole proprietors of certain improvements in the construction of Locomotive Engines, and other railway carriages, secured to Col. Stephen H. Long, of the United States Engineers, by letters patent from the United States, and that they are prepared to execute any orders for the construction of Locomotive Engines, Tenders, &c. with which they may be favored, and pledge themselves to a punctual compliance with any engagements they may make in reference to this line of business.

They have already in their possession the requisite apparatus for the construction of three classes of engines, viz. engines weighing four, five, and six tons.

The engines made by them will be warranted to travel at the following rates of speed, viz. a six ton engine at a speed of 15 miles per hour; a five ton engine at a speed of 18 miles per hour; a four ton engine at a speed of 22 1/2 miles per hour. Their performance in other respects will be warranted to equal that of the best English engines of the same class, with respect not only to their efficiency in the conveyance of burthens, but to their durability, and the cheapness and facility of their repairs.

The engines will be adapted to the use of anthracite coal, pine wood, coke, or any other fuel hitherto used in locomotive engines.

The terms shall be quite as favorable, and even more moderate, than those on which engines of the same class can be procured from abroad.

All orders for engines, &c. and other communications in reference to the subject, will be addressed to the subscriber, in the city of Philadelphia, and shall receive prompt attention.

By order of the Company,

WILLIAM NORRIS, Secretary.

December 24, 1833.

For further information on this subject see No. 40, page 778 of this Journal.

RAILROAD TURNOUTS, REVOLVING PLATFORMS AND SIDELINGS.

The subscriber having been for some years engaged in constructing turnouts, and inserting the necessary switches and fixtures appertaining to the same, on the Baltimore and Ohio Railroad, and as those works on that road will be shortly completed, he is desirous of being employed by any Railroad Company requiring work of the above description.

He will either contract at a fixed price to execute the work, he providing all the necessary materials and fixtures, or otherwise,—or he will engage himself at a stated salary.

In relation to his abilities and general character he begs to refer any Company, disposed to engage him, to the Baltimore and Ohio Railroad Company.

Letters can be addressed to him at the Office of Construction Baltimore and Ohio Railroad, Baltimore.

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REUBEN ALER.

SURVEYORS' INSTRUMENTS.

Compasses of various sizes and of superior quality warranted.

Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by E. & G. W. BLUNT, 134 Water street, corner of Maidenlane.

J81 6t

ENGINEERING AND SURVEYING INSTRUMENTS.

The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely new: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy;—a Railroad Goniometer, with two Telescopes;—and a Leveling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.

WM. J. YOUNG,
Mathematical Instrument Maker, No. 9 Dock street,
Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.

Baltimore, 1832.

In reply to thy inquiries respecting the Instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad. I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all Instruments of the kind are liable.

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sights, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to lateral angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying off rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,

JAMES P. STABLER, Superintendent of Construction
of Baltimore and Ohio Railroad.

Philadelphia, February, 1833.

Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors.

E. H. GILL, Civil Engineer.

Germantown, February, 1833.

For a year past I have used Instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these Instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY B. CAMPBELL, Eng. Philad.,
German and Norrist. Railroad

"LAZY SAM."

The following story will not be worth the less for being true. A Kentucky horse drover being in South Carolina with a drove, happened to take it to the neighbourhood of Gen. H——, whose character for jockeying and manoeuvring in trade is much more celebrated than his feats in arms. The Kentuckian having perfect acquaintance with his character, went to see him to sell him some horses, or to swap—or to run a race, as the fates and destinies might order and decree.

He was one of our careless unconcerned knock down and drag out looking sort of fellows: who would assume just as much simplicity of countenance and address, as circumstances might require. He had the appearance of being about twenty-two or twenty-three years of age, as usual was dressed in blue mixed jeans, to hide dirt, and wore a drab colored hat for the same reason.

'General,' said he, 'I am just from old Kentuck with some powerful nice horses, and may be you want some. Daddy told me if I came in your parts to call on you, and he reckoned may be you would buy a pair of matches, or help me out in tradin, for he said you had a power of money, and understood tradin to a scribe. Here's a letter from him,' handing one. 'And besides I've as nice a pair of matches, as you could shake a stick at; and as tight a nag for a quarter, Daddy says, as any in the parts: but he says I must run no races, caze mought lose, and we want all the money we can scrape to pay for land. But I reckon he'd suit you to a fraction, caze you are a sportin character, mought win a powerful chance of money on him.'

While he was thus introducing himself and telling his business, the General opened the letter which read as follows:

'Dear General—I take this opportunity to wright to you by my Job, who is taken the first drove he ever driv, and I want you to roll a log a leetle for him, if so be it suits you. Job's spry enough at home, but has'nt cut his eye teeth yet, and you'll lend him a hand, I'll due as much for any of your boys if you've got any, whenever they come to these parts tradin or any thing else. So no more at present, but remain your affectionet friend till death.'

PETER TOMPKINS.'

The hero of horse races, cotton bags and sugar hogsheds, thought that he perceived a neat speculation, and acted accordingly. Mr. Job Tompkins was received with much courtesy; his man and boy entertained with the best in the larder, whilar the five and twenty horses were not neglected. It is true the General had not the slightest recollection of his friend and correspondent, Peter Tompkins. He might have once known him, or not. It was the same thing. Here was Job, a raw Kentucky stripping, with twenty-five fine horses, as easily squeezed as a ripe lemon. It was not in his nature to forbear.

In the meantime Mr. Job Tompkins made himself quite free and easy, and swaggered about the costly furnished apartment as if he had been in a log cabin. He viewed the silver plate on the sideboard with much apparent astonishment, and a pair of silver snuffers, especially, excited his curiosity.

'Lord General! ar them thar candle snuffers made out of the pure stuff? I never see'd any afore but in ones, and mamma uses her sheers. And all them ar things on thar ar big chist (the sideboard) are the r'al Spanish castins! I heard talk of this afore, but never seed it. Now if I was to tell this in our settlement, may be they would'n thop straddle of me, and ride over me rough shod, for a liar. But they say you're a powerful sight the richest man in the South States, aint you?'

To all which the General returned suitable answers; and Mr. Job and he were hand in glove, for the time being. Each man resolutely bent to make a successful lodgment in his neighbor's pocket with the view of clearing it out, a Herculean labor to be sure;—when Job heard in the next room the sound of music. Several Kentucky reels were played, anon the sweet breathings of a melodious voice sung Sweet—sweet home.'

'May I be ——d' said Job, 'if that dont beat Bob Walker, and he's a patch above common. But that aint none of your music boxes I know; it cant be. Is it?'

'My daughter is playing on the piano,' said the General, 'we will walk in the room and hear her.'—Here were blandishments to strike Job dumb, and entrance all his senses.

"The man who has no music in his soul,
And is not moved with concord of sweet sounds
Is fit for treason, stratagems and spoils."

Job thought a man might love music and spoils also.

He felt a liking for both. Therefore he applied the music in his own way most rapturously.

Said Job, 'May I never pull another trigger, if she's not a priming above any thing I heard talk about. Why she's chartered! She's a r'al one, I assure you. Why its enough to make a fellow swim that cant; and if it was'nt for all thes fine kivorlids over the track, (the carpet) and I had a partner to my mind, I'd go my drove to nothing or less, I can shake the sticks off of any boy you can produce.'

The General now thought the Kentuckian ripe enough. To aid in which he had been well plied with choice liquor as he denominated the Brandy and Madeira.

The horses were brought out and examined, and praised, and cheapened, and faults found with all.

They could agree upon nothing.

'Well, where is your quarter horse?' asked the General. 'Oh, ho! I sort o' tho't what you were after,' answered Job, 'for you hardly looked at them thar matches, and these fine geldings.' So you must be after the quarter nag, Jim fetch up Lazy Sam, will you! Now General I'll tell you, honor bright, he's never been lick't in a quarter spurt, but once; by Joe Miller's sorrel mare, which runs like a streak of lightning. She's a r-al screamer. Daddy swept for him last fall after she tanned him out. If I knowed her I'd give you her marks, so as you might'nt be tuct in. For I heard Joe was bringing her to the South to win the expenses. But here's the horse any how, and I assure you he's not slow.'

Now be it remembered that honest Job was not ignorant, that General H—— was at that time the owner of this identical mare, and for reasons best known to himself he wished to make a race between her and Lazy Sam.

The General examined Lazy Sam with the eye of a Jockey.

'Fish,' said he very contemptuously, 'why this thing cannot run; why it's as flab-sided as a sheep, and as heavy shouldered as a hog, and cut hammed besides: I would not give a good mule for three of it. Why did you not bring a lot of mules to market? I would have bought some at a fair price. Your horses do not suit me. Pray what do you ask for this thing which you call a running nag? It may de to plough a season or two. Does it work?'

Unlike the Job of ancient days, Job Tompkins suffered his anger to rise and master him. At least he made the General think so. To use his own words, he corvorted. He screamed out.

'Hello! Mister, I wonder you're so mighty wise considering you know so little. Why you make me feel all over in spots, to listen at you. I reckon may be you've got a quarter nag yourself: aint you?'

'I have a plough nag here' said the General very coolly, 'that I am sure can run away from that thing of yours.'

'Thing?' holloed Job, 'why you make me feel all sort of wolfy, and I've a good mind to go my whole lot again any thing you can parade in the whole South.'

'I would not spoil a good mind then,' quoth the General. 'But I suppose you are afraid to run, as your father has forbid it.'

'I dont care a solitary flint what Daddy says when my Irish is up,' exclaimed Job indignantly. 'Bring out your nag and let's see it.'

The General gave the order; and as Job expected, the sorrel mare, (once Joe Miller's) was brought forward.

While Job examined her, his adversary endeavored all he could to fret him by dispraising his horse; and Job appeared to be worked up to fever heat.

To cut short the story, the drove was staked against twenty-five hundred dollars in a check upon the C— Bank. And the company adjourned to the General's track, to see the race. On the way Job stopped short, and facing the General, asked very earnestly,

'Now you're sure this aint Joe Miller's Nag? My mind sort o' misgives me, caze from what I've heard they sort o' favor like.'

'D—n you Joe Miller and his nag also,' replied the General, 'the mare is mine I tell you.'

This appeared to be satisfactory.

I have given you the General's description of Job's running horse—done to fret him. It was by no means a correct one. Lazy Sam was a well made poney of the *Printer* stock, but was of a mild, sleepy, sluggish disposition, until his mettle was roused.—He generally went with his eyes half shut, and his head drooping at an angle of forty-five degrees.—

When the General viewed him he was in this condition.

The horses were in the General's stable and the check for two thousand five hundred dollars in the hands of a gentleman present. The General had no doubt about keeping all Job's fine horses and sending him home on his ten tees. Job thought differently. Lazy Sam was led along by Job's boy, as sleepy as usual. The preliminaries were adjusted, and riders mounted. As Job threw Jim on Lazy Sam, he sprang all fours off the ground; and his dull sleepy look, was changed into a wild, almost devilish expression.

He looked as Job did when he 'corvorted.'

The General lost his usual mahogany color, and looked pale; but he said nothing.

Lazy Sam won the race by thirty feet.

Job was suddenly cool as a cucumber. And as he put the twenty-five hundred dollar check in his greasy pocket book which he did very deliberately, he looked round cunningly.

'Isort o' think that's first rate and a half,' said Job, 'and a little past common. Why Gin'ral, Sam's laid you as cold as a wedge.' He turned round suddenly to his rider, 'Jim' said he, here's five dollars, why it all goes in a man's life time. But the General looks as if he'd been squeezed through the leetle end of nothin, or less.'

TO IRON MANUFACTURERS AND OWNERS OF IRON ORE BEDS.

JOSEPH GOULDING, of Karsville, Essex county, N. Y., has invented and patented a *Magnetic Separating Machine*, for separating Iron Ore from the extraneous matter usually found in connection with it; and he begs leave to recommend it to the special notice of owners of Ore Beds as possessing qualities of great importance, as by the use of it many ore beds can be made very valuable, it being applicable in all cases when the Ore is magnetic.

The quality of the iron made is much improved by the process of separation, indeed so good iron can, after separation, be made from ore which would without it be considered not worth working. There is also found to be a great saving in the transportation of ore, and in time and fuel required to work the same into iron.

Mechanics can be furnished at short notice which will separate from half a ton to twenty tons each in twenty-four hours.

J. Goulding also manufactures to order, *Cylindrical Forges* and *Blast Furnace Bellows*, of the most improved construction, and which are successfully used in nearly all the Forges and Furnaces in Clinton and all the adjoining counties.

January 20th, 1834.

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900	do. 2 do.	do.
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350 do. of Edge Rails of 36 lbs. per yard, with the requisite chairs, keys and pins.

Wrought Iron Rims of 30, 33, and 36 inches diameter for Wheels of Railway Cars, and of 60 inches diameter for Locomotive wheels.

Axes of 2 1/2, 3, 3 1/2, 3 3/4, and 4 inches diameter for Railway Cars and Locomotives of patent iron.

The above will be sold free of duty, to State Governments and Incorporated Governments, and the Drawback taken in part payment.

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Models and samples of all the different kinds of Rails, Chairs, Pins, Wedges, Spikes, and Splitting Plates, in use, both in this country and Great Britain, will be exhibited to those disposed to examine them.

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ALBANY SEED-STORE AND HORTICULTURAL REPOSITORY.

The subscriber having resumed the charge of the above establishment, is now enabled to furnish traders and others with FRESH GARDEN SEEDS, upon very favorable terms, and of the growth of 1833, warranted of the best quality.

The greatest care and attention has been bestowed upon the growing and saving of Seeds, and none will be sold at this establishment excepting those raised expressly for it, and by experienced seedsmen; and those kinds imported which cannot be raised to perfection in this country; these are from the best houses in Europe, and may be relied upon as genuine.

It is earnestly requested whenever there are any failures hereafter, they should be represented to the subscriber; not that it is possible to obviate unfavorable seasons and circumstances but that satisfaction may be rendered and perfection approximated.

Also—French Lucern, White Dutch Clover, White Mulberry Seed, genuine Mangel Wurtzel, Yellow Locust, Ruta Baga, and Field Turnip Seeds, well worth the attention of Farmers.

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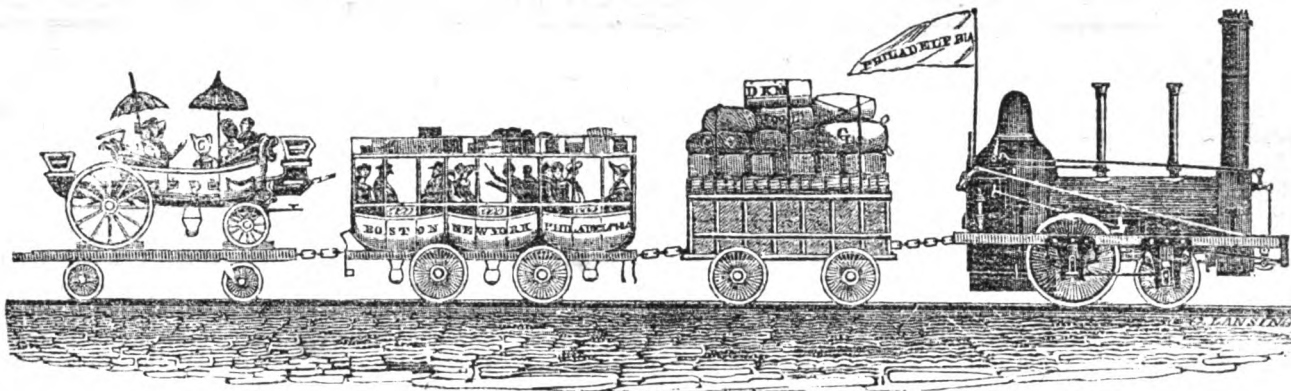
Catalogues may be had at the Store; if sent for by mail, will be forwarded gratis. Orders solicited early, as the better justice can be done in the execution.

* * Mr. Thorburn is also Agent for the following publications, to wit:—

NEW YORK FARMER and American Gardener's Magazine. MECHANICS' MAGAZINE and Register of Inventions & Improvements.

AMERICAN RAILROAD JOURNAL and Advocate of Internal Improvements; and the

NEW-YORK AMERICAN, Daily, Tri-Weekly, and Semi-Weekly; either or all of which may be seen and obtained by those who wish them by calling at 347 North Market street, Albany.



AMERICAN RAILROAD JOURNAL, AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT No. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, Editor.]

SATURDAY, MAY 24, 1834.

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, MAY 24, 1834.

NEW-YORK AND ERIE RAILROAD.—We understand that JUDOR WRIGHT has been employed, and left this city on the 22d, with two parties for Deepark Gap, to commence the preliminary survey of the route for this road. The survey now to be made is not of course to locate, but merely to ascertain the practicability of the route.

We promised in our last to give in the present number some good reasons why the state should aid in the construction of a railroad through the southern tier of counties, but are obliged to omit them until our next.

We acknowledge the receipt of the first annual report to the stockholders of the S. Carolina Railroad and Canal Company, since the completion of the work. From the report we learn that the business of the road has been regularly increasing since the opening of the road, from about \$600 to \$3,400 per week. This increase has been effected, too, without the aid of the cotton crop, of which only about 4,000 bales have been transported on the railroad.

The earnings of the road have been, from 1st January to 1st May, \$39,518.31.

It should be borne in mind, at the same time, that there has not been at any time, not even now, although great efforts have been made to obtain, a sufficient number of cars, both passenger and freight, of which 8 to 10 per week are added, to meet the demand. Two new locomotives are expected daily from Europe, and two others in this country are in a state of forwardness, which, when in use, will give them twelve or fourteen engines, twenty-four pas-

senger, and one hundred and fifty freight cars, all of which will probably find constant employment through the business season. It is, indeed, gratifying to witness the success of this road. It will give an impetus to the prosperity, not only of South Carolina, but of the whole South. Alabama is already pushing her railroads in a direction to join South Carolina; and Tennessee, also, as will be seen in this number of the Journal, is following closely upon her heels, so that the time is not distant—not five years—when the Charleston railroad will be extended to the Mississippi, and not only to the Mississippi, but also to the Ohio, and to the navigable waters emptying into the Gulf of Mexico, thus opening an easy, cheap, and rapid communication to the ocean for the products of the most fertile country in the world.

We have not, to-day, room for extracts from this report, and shall therefore refer to it again.

We have also to acknowledge the receipt of another report, the report of J. Edgar Thompson, Esq., Engineer of the Oxford railroad in Pennsylvania—another link in the grand Atlantic line. The Oxford railroad is only nineteen and two-fifths miles in length, commencing at the Columbia Railroad, forty-five and a half miles from Philadelphia, and terminating at the Maryland line. By the completion of this road, Pennsylvania will have performed her part towards the accomplishment of the grandest scheme of internal improvement ever contemplated in this or any other country. She will have forged another link of a chain which, when completed, will tend more to the permanence of the Union than all the plans of all the politicians of the age. We must lay this, also, on the table until another week.

TENNESSEE RAILROADS.—We are indebted to Col. PETITVAL, formerly of the Charleston, S. C. Railroad, but at present of Tennessee, for the following communication, relative to the works in contemplation in that State, and also for his reports upon two routes, one from Jackson to the Mississippi, and the other from Columbia, through Mount Pleasant, to the Tennessee river, which will be found in the present number of the Journal.

We are the more indebted to Col. Petitval for these reports, as they are, we think, the first which have come to hand from Tennessee since the establishment of the Journal; they are not, we trust, the last from the same quarter, as no State in the Union will be more benefitted by the introduction of railroads than Tennessee.

Nashville, May 2, 1834.

To the Editor of the Railroad Journal.

DEAR SIR,—A constant employment during all the winter in reconnoitering different routes for railroads in the western part of the State of Tennessee, prevented me from giving you any account of the situation of the internal improvements in that State. The companies being now organised, the officers elected, and the stock subscribed, I take the advantage of my first leisure hour to send you my two reports to the stockholders of the Jackson and Columbia Companies.

In January last, stock to the amount of \$500,000 was subscribed for a line of railroad to the Mississippi river, and in March a like subscription was made for another line, in the same direction, from Columbia, Maury county to the Tennessee river; and as, by the charter of the Jackson Company, they have a right to extend their road in the western districts, increasing the stock to the amount of one million of dollars, the two roads will be soon connected by an intermediate line.

I examined all the country, and furnished the companies with estimates of the probable cost of the work, and it is on account of those reports that the stock has been so liberally subscribed. In Jackson the commissioners were obliged to strike out \$430,000, the amount subscribed over the capital of the Company, thereby reducing the subscription of the largest stockholders to 159 shares each.

East Tennessee has had a charter for a railroad since 1831, and is now making preparation to join the west in improving the internal communication of the State; and I can assure you that within 6 or 7 years an uninterrupted communication will be opened between New-York and New-Orleans, either by the Valley of the Clinch, through Abingdon, Virginia, joining the Petersburg railroad; or through the Valley of the French Broad, by Ashville, North Carolina, joining Athens, Georgia, or Hamburg, South Carolina, by which the mail will be carried over the route in 5 or 6 days.

A railroad through the centre of the State of Tennessee will be of inestimable advantage, not only to that State, but to the whole Union, as it will be the great rendezvous of all the emigrants to the Valley of the Mississippi, affording a speedy and easy transportation; opening the markets of the north-east and south-west for the products of her rich soil and mild climate, so well calculated for wheat, hemp, tobacco, and cotton; and also for her inexhaustible quarries of marble, beds of coal, veins of ore of every metal, found amongst her beautiful and picturesque mountains.

I am sincerely yours, &c.

J. B. PETITVAL, Civil Engineer.

On the Color of the Air and of Deep Waters, and on some other Analogous Fugitive Colors. By COUNT XAVIER DE MAISTRE. Translated from the Bib. Univ. by Prof. J. Griscom. [From the American Journal of Science and Arts.]

The blue color of the sky is accounted for, by supposing that the sun's light, reflected by the surface of the earth, is not entirely transmitted by the atmosphere and lost in space, but that the molecules of air reflect and disperse the blue ray. Why this ray is reflected in preference to the indigo and violet, which are more refrangible, and appear to be more easily reflected, is a circumstance not accounted for.

The same blue reflection is observed in deep sea water, and in lakes, and rivers, when they are limpid.

The same singular phenomenon is also witnessed in various substances of different natures, which have no apparent analogy: thus, opaline substances are blue by reflection; the noble opal, (independently of the partial rays which give so high a value to this stone, and which are attributed to natural fissures,*) reflects a general blue color, which is also observed in some other siliceous stones, and which is still more obvious in opaline glass. A weak solution of soap is slightly blue; the jelly of ichthyocolla is more so, and an infusion of the bark of the large chesnut tree, (*maronnier*), which is perfectly opaline, still more. Newton speaks of a wood which he calls nephritic, the infusion of which is opaline. In the Sicilian sea, at the mouth of the Giaretta, (the ancient Simethus,) specimens of amber are found which are in great request on account of their highly opaline properties.

A blue reflection is also observed in certain bodies which are opaque-white when reduced to plates thin enough to transmit light. A familiar example occurs in the skin covering the veins, which transmits a blue, although neither the skin nor the blood is of that color.

The mixture of white with black and with transparent colors gives in painting numerous examples of opaline blue.

This blue color is the only one which can be explained on the theory of thin plates, by supposing that the particles of opaline bodies have just the dimensions requisite to reflect the blue ray. This explanation derives some probability from observing that the color transmitted by these bodies is the complementary yellow of the reflected blue. This theory, however, presents great difficulties, and it is not intended absolutely to admit it in this essay.

The analogy between the colors of opaline substances and those observed in the air and waters, will become obvious by an examination of their action on reflected and transmitted light, proving that the phenomena are owing to the same cause.

Opaline glass is produced by mingling in the common metal of white glass a portion of calcined bones, which gives a blue shade without much impairing the transparency. The bone powder appears to be in a state of extreme division, or a kind of demi-solution, which does not disperse the transmitted light.

The color of the light transmitted by opaline bodies varies according to the volume of the mass; it is yellow if the body is thin, and becomes successively orange and red in

proportion to the increase of thickness. The analogy of the air with opaline substances is not only manifest in the blue reflection, but also in its action on transmitted light, which becomes successively yellow, orange, and red, according to the volume of air and the kind of aqueous vapors with which it is impregnated. When the sun is high, and his light crosses only the purest and thinnest portions of the atmosphere to reach the clouds, they are white, with a slight tinge of yellow; they become sometimes yellow and orange as the sun declines; and at length red and purple when his light grazes the earth, and is transmitted by the densest portion of the air, and loaded with the vapors of the evening.

But it often happens that the colors do not appear, and that the sun sets without producing them. It is not, therefore, to the purity of the air alone that we must attribute the opaline property of the atmosphere, but to the mixture of air and vapor mingled in a special manner, and producing an effect similar to bone dust in opaline glass; neither is it the quantity of water in the air which occasions the colors, for when the weather is very damp it is more transparent than during a time of drought. Distant mountains are seen more distinctly, a well known prognostic of rain; the sun then sets without producing colors, it looks white through the fog and damp vapors of the morning, but when the clouds are colored red by the setting sun, the phenomenon is generally deemed the signal of fine weather, because these colors are a proof of the dryness of the air when these contain only the peculiar diffused vapors which give it its opaline quality. In this state of things the disc of the sun appears like a red fiery globe divested of rays.

The blueness of the sky, therefore, varies according to the kind of vapor which is spread through the air; and what renders it unquestionable that its blue color is caused by these vapors is, that it appears black when seen from the highest points of the globe, above which there is not sufficient vapor to reflect the blue color.

Limpid waters, when they have sufficient depth, reflect like air a blue color from below; it is of a deeper shade, because it is not mixed with white light; very often it is not perceived at all; the reflection from the surface, on which the sky and surrounding objects are painted as in a mirror, often occasions the disappearance of the internal reflection, or forms with it complex shades.

We have seen that the property which air possesses of producing colors is derived from the presence of watery vapor; analogy leads us to presume that this property in water arises from a mixture of air which it always contains to a greater or less amount.

Although the blue color of water is often masked by numerous causes, it is sometimes exhibited in all its intensity; a fine example of it is witnessed in looking at the Rhone from the bridge at Geneva. The river seems to flow from an ultramarine* source. The spectator is in the most favorable situation for observing the internal reflection disengaged, as much as possible under an open sky, from the reflection at the surface.

Agitation of the surface has a great effect on the color. A tranquil sea sometimes reflects the warm color of the horizon, re-

presenting all the tints of a luminous sky so exactly, that the sky and sea appear to be blended with each other; but if a gentle breeze ruffles the surface, the brilliant tints vanish, and the blue from the interior immediately predominates.

Such is also the cause which enables one to distinguish the course of the Rhone far into the waters of the Leman: the progressive motion of the river in the motionless water of the lake produces an agitation which diminishes the brilliant reflection of the sky and renders the color of the water more sensible.

The green tint which the sea often assumes may seem to throw some doubt on this property of reflecting the blue ray, regarded as inherent in the nature of water; but this green color is observable only when the depth of the sea is insufficient, that is, when the bottom may reflect the transmitted light.

In looking at the sea from an elevation of about fifty toises, on the shore of the island of Capri, I observed spots which were of the finest green, much more luminous than the dark blue sea with which they were surrounded. To ascertain the cause, I took a boat and proceeded to the place. The spots then were no longer perceptible, but I soon re-discovered them, and found that the color was occasioned by white rocks, which were easily distinguished, notwithstanding their great depth, from the dark sandy bottom in which they reposed. These rocks, viewed in a vertical direction, were of a lighter green than when seen from the height, but I could not doubt that they were the cause of the phenomenon.

To settle the point by direct experiment, I prepared a square sheet of tinned iron, fourteen inches long, painted it white on one side, suspended it horizontally to a cord, and sunk it in a deep place, where the water under the boat was blue, without any mixture of green, watching the effect under the shade of an umbrella which was held over my head. At the depth of twenty-five feet it acquired a very sensible green tinge, and this color became more and more intense to the depth of forty feet, when it was of a beautiful green, inclining to yellow; at sixty feet the color was the same, but of a darker shade, and the square figure of the plate was no longer distinguishable; until at eighty feet there was apparent only an uncertain glimmering of green, which soon disappeared.

We thus perceive that the light of the sun transmitted through water, and reflected from a white surface, produces green. The cause may be readily conceived by admitting in deep waters the same opaline property which we recognize in air. The light, after penetrating a mass of one hundred feet of water, to reach the plate and return to the surface, ought to be yellow, like that which would be transmitted by an opaline fluid; this color reflected by the plate, mixed with the blue which reaches the eye from all quarters, produces the green. If the bottom of the sea were white, like ceruse, the waters near the shore would present the same green tint which the plate produced at different depths; but the bottom is generally of a dark grey, which reflects less light, and therefore yields only a dark and uncertain green: hence the green color of the sea, as witnessed near the shore, is owing to the reflection of light from its bottom. To leave no room for doubt in this matter, I took a

* This was the opinion of the celebrated Haüy.

* Having the blue color of the ultramarine paint.

boat and pushed out from the shore, under a clear July sun, at eleven in the morning, to examine the changes which might be perceptible in the color of the water viewed on the side of the boat opposite to the sun.

At fifty toises from the shore the water was decidedly green, the shade of which remained during fifteen minutes; it then became a bluish green, and, in advancing, the blue continued to increase, and at length to predominate, and in an hour's time the water under the boat was a pure blue without a mixture of green.

In returning to the shore I was attentive to the re-appearance of the green, and as soon as I found it clearly marked I sounded and found the depth one hundred and fifty feet; thus the light which renders the sea of a green color passes through three hundred feet of water. But in that part of the gulf another cause contributed to the green color, viz. the impurity of the water as it exists to the extent of some miles from the shore. The bay of Naples receives no river that can give motion to the waters charged with all the filth of that populous city. On the shore of the islands of Capri the water is perfectly blue at eighty feet, while near Naples it requires one hundred and fifty feet, a difference which must be ascribed to the impurity of the water in the bay.

If the bottom be of a black, or very dark color, the water may be blue at a much less depth than eighty feet. Besides, if an obstacle intercept the direct rays of the sun, so as to throw a shade over the bottom, while the water itself is illuminated, the latter will be blue, because no longer colored by yellow rays from the bottom; this effect may take place near shore in deep waters, by projecting cliffs or high shores.

It is thus ascertained, that when the sun's light transmitted through water is not lost in its depth, but is partially reflected by the bottom, the water is of a green color.

This effect may arise in deep water from beds of submarine plants, or by myriads of microscopic mollusca, which, covering a vast extent of sea, may act upon the light, or even exist in mass sufficient to produce a permanent color.*

The colors transmitted by deep waters cannot be directly observed like those of air, which are visible among the clouds; observations agree on this point. The learned Hatley, in descending in a diving bell, observed that a ray of light, which reached him through a small opening closed by glass, gave to the upper part of his hand a rose color. Had his hand been white, instead of being itself more or less red, the experiment would have been more conclusive. The depth to which he descended was probably not more than thirty or forty feet, at which the transmitted light could not differ much from yellow, which, mixed with shades of white, and with the natural color of his hand, would produce a rosy tint. He observed that the under part of his hand was green, which must have been occasioned by reflection from the bottom.

The bluish green color of crevices in the glaciers is occasioned in the same manner as that of water near shore; if the mass of ice was as great and as homogeneous as

that of the sea, the interior of the crevices would be blue; but the ice contains air bubbles, particles of snow, and fissures which reflect the transmitted light, throwing it from one face to another of the crevice until it finds an escape. These opaque substances in the glacier produce the same effect as a white surface in the depths of the sea.

There is on the shore of Capri a grotto, which nature seems to have constructed to exhibit in all its beauty the green color of the sea, and which on this account is called the *azure grotto*; it is situated under a cliff on the north side of the island. As it could not be entered by a common boat, it remained unknown until 1828, when two Prussian artists, Kopitch, and Frisi, swam into it, and made it known. Their account excited public curiosity, and boats of convenient size were made, which now serve to introduce amateurs. Its entrance is triangular, having a base of four feet five inches wide and about the same height. The summit is rounded, and having but little thickness the entrance is easily effected by stooping, when the traveller finds himself in a spacious grotto, the sides and roof of which are remarkably regular. Its extent from the front to the rear, which is the only landing place, is one hundred and twenty-five feet, and it measures one hundred and forty-five feet in a transverse direction. The depth of the water at the entrance is sixty-seven feet, in the middle of the grotto sixty-two feet, and at the landing place fifty-eight feet. The rock is limestone, of a clear grey fracture, and there are no indications of stratification.

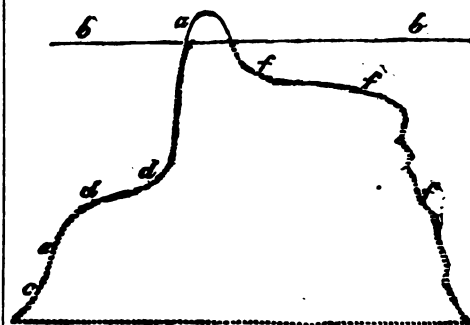
On entering, every thing appears dark except the water, which is luminous, and of a splendid blue, contrasting with the general obscurity. In advancing from the entrance, the ends of the white oars shine in the water with a splendid blue light, which disappears as soon as they are raised: this is the most singular phenomenon of the *azure grotto*, for people are puzzled to conceive why objects are so vividly luminous in the water, and no longer so when above the surface. In dipping the hand or a cloth into the water, one would think it a blue dye; the whole immersed part is luminous and colored, while the parts without are dark and uncolored.

At the bottom of the grotto there is a small space on a level with the water, where debarkation is effected, and which is the only spot which leads to any suspicion of the work of human hands in the grotto. It is a kind of bench in the rock, about three feet high, on which several persons may conveniently place themselves and examine at leisure the phenomenon of the *azure grotto*. The light, which comes in at the small opening, produces a train of white light, like the reflection of the moon from the water when rising, and which extends half way over the sheet. The rest of the surface is blue, even to the feet of the observer. This color gradually diminishes to the right, where the walls of the grotto are farther from the entrance. The train of white light illuminates also the vault, and exhibits it in its natural color, but when the entrance is closed by a boat, or more perfectly by a dark cloth, the vault itself becomes blue, reminding one of the effect of burning spirits of wine in a dark chamber. There is, then, no light but that which proceeds from the water. The experiment of the cloth ought to be made by

all who wish to enjoy the spectacle in its full beauty.

If, when the observer is seated on the bench, a boat passes in front, it forms no reflection nor shade in the water. If the eyes are then covered with the hands, so as to hide the boat and the water, the former appears suspended in the air like a dark silhouette crossing the sky. This spectacle is so striking when first observed, that one cannot avoid some apprehension on account of those who furnish the occasion of it. In passing to the dark side mentioned on the right, the water is no longer blue, but remarkably transparent. The rock below is so illuminated as to show its fissures at a considerable depth, while above the water it is very obscure. The water line is clearly marked, and has a yellowish tint. The depth seems to increase the longer it is observed, and at length the bottom is seen, although forty feet below. The white plate which I let down was very distinguishable on the darker sand. Its color, instead of being green, as when tried in the sun, was slightly yellow.

The feeble yellow light which illuminates the submarine walls in this part of the grotto, proceeds by reflection from the bottom, and from the walls opposite, which receive the exterior light; this light, which has traversed a great mass of water, should be yellow, like that transmitted by opaline fluids, and thus the opaline quality of the sea affords a satisfactory explanation of the principal phenomena of the grotto. I have endeavored to give an idea of this construction by means of the subjoined figure, which represents the exterior rock or shell of the grotto, as it exists both in the sea and above the surface.



The little entrance is shown at *a*, above the level of the sea, represented by the line *b b*. The eastern side of this entrance extends almost perpendicularly to the depth of thirty or forty feet, when it appears to be cut horizontally at *d d*, and suspended on the dark blue water of the sea; *d e c* is the supposed continuation of the eastern side of the entrance, to the bottom, which, as we have seen, is sixty-seven feet deep. The western side of the entrance, *f f f*, forms an angle at ten or twelve feet below the surface, and is prolonged horizontally from twenty to twenty-five feet, and then descends obliquely, probably to the bottom of the sea, where it cannot be seen beyond thirty or forty feet.

This construction gives an immense opening for the light to enter the grotto through the water, even when the little opening above the surface is closed, and it thus occasions over a great mass of water, that dispersion of the blue ray which always takes place in deep and limpid waters, and which is manifested in greater splendor in the *azure grotto*

* The theory of the author derives confirmation from the beautifully green appearance of large fish as they turn upon their backs in rising towards the surface, and sporting round a ship, during her passage through a dark blue sea.—[*Trans.*]

n consequence of its being mingled with no other light.
(To be continued.)

Report to the Commissioners of the Columbia Railroad, in the State of Tennessee, on the practicability of the project, with the probable cost of Construction. By JOHN B. PETITVAL, Civil Engineer. [Communicated for the Railroad Journal, &c.]

COLUMBIA, March, 1834.

To Samuel H. Williams, John Miller, Edmund W. Dale, P. R. Booker, John Brown, Alexander Brown, H. Langtry, and Francis S. Walker, Esquires, Commissioners of the Columbia and Tennessee Railroad :

Gentlemen,—In conformity with your instructions of the 19th of February last, directing me to make the preliminary surveys, exploration, and reconnoitering, in regard to the practicability of constructing a railroad from the town of Columbia, passing by the village of Mount Pleasant, to a point on Tennessee river, between a landing place, five miles above Carrolls ville, and the mouth of Tom's Creek, also the probable cost of construction, I have the honor to report, that,

Leaving the village of Mount Pleasant in a south-west direction, and following the Valley of the Bigby Creek, by Mrs. Nightingall's Hollow, and avoiding the head waters of Swan Creek, the line of railroad will arrive to the culminating point of the hills of the Big Buffalo, crossing only Saw creek, in a distance of about 13 miles.

The spinning factory built in the hollow is the only material obstruction ; but in bargaining for the place, the company will have the advantage of a good water-power for a saw-mill.

Four streams will be successively crossed at right angles, viz.: the Big Buffalo, the Little Buffalo, the Forty-eight, and Green river, in a distance of 26 miles.

Bending the course more to the south, for to take advantage of the valley of Green river, near Waynesboro', the line has to pass afterward over a very hilly country ; but the valley of Eagle Creek will be followed for some time, and, by a gentle undulating ground, the road will reach a landing-place on Tennessee river, between Ellis' Ferry and Roche's Farm, where a good spot will be selected in a distance of about 15 miles from Waynesboro'.

The estimate for that southern route will be as follows :

5 miles at \$5,000	-	-	-	\$25,000
The Factory	-	-	-	4,500
1 mile at \$7,000	-	-	-	7,000
2 " 5,000	-	-	-	10,000
2 " 4,000	-	-	-	12,000
2 " 5,000	-	-	-	10,000
Crossing the Buffalo river	-	-	-	1,000
2 miles at \$6,000	-	-	-	12,000
15 " 5,000	-	-	-	75,000
9 " 6,000	-	-	-	54,000
1 " 5,000	-	-	-	5,000
4 " 10,000	-	-	-	40,000
4 " 4,000	-	-	-	16,000
6 " 5,000	-	-	-	30,000

54 \$301,500
Contingent expenses at 5 per cent. \$15,075

Whole amount of construction for the Southern Line - \$316,575

For the iron plates at the same price as for the Charleston and Hamburg Railroad, 17 tons per mile, at \$45, \$765
1,000 lbs. 5-in. spikes at 9 cts. 90

\$855
For 45 miles of road at \$855 - \$46,170

Leaving Mount Pleasant in a western direction, the ridge of the Bigby Creek will be avoided by Gordon's Hollow, and Swan Creek crossed between W. Thomas's and ———'s mill ; then, passing about half a mile north of Grinder's old stand, and avoiding the head waters of Grinder's Little Rock house and Trace

Creeks, the line will follow a straight course for about 20 miles in the barren, and bending a little to the south, take advantage of the valley of Sinking Creek, cross Buffalo river, at Thompson, and reach Cotton's Ferry, by the valley of Bee Creek.

The estimate for this line will be as follows :

4 miles at \$5,000	-	-	-	\$20,000
3 " 7,000	-	-	-	21,000
3 " 4,000	-	-	-	12,000
Crossing Swan creek	-	-	-	700
20 miles at \$4,000	-	-	-	80,000
6 " 5,000	-	-	-	30,000
Crossing Buffalo river	-	-	-	1,000
3 miles at \$10,000	-	-	-	30,000
3 " 6,000	-	-	-	18,000
4 " 8,000	-	-	-	32,000

46 \$244,700
Contingent expenses, at 5 per cent. \$12,235

\$256,935
Iron plates for 46 m. of road at \$855, \$39,330

\$296,265

The country between Bee and March Creeks being generally inundated at common high water, no convenient landing place will be found above Jennings' Bluff the line of railroad will reach that point in three different directions.

1st,—By the Valley of Cedar Creek.

For the foregoing line from			
Mount Pleasant to Buffalo \$164,700			
1 mile at	\$10,000	-	10,000
5 "	5,000	-	25,000
5 "	6,000	-	30,000
4 "	8,000	-	32,000

\$261,700
Contingent, at 5 per cent. \$13,085

\$274,785
51 miles of iron plates at \$855 - \$43,605

\$318,390

2d,—By the Big Rock house Creek.

For the foregoing line from			
Mount Pleasant to Buffalo			\$164,700
3	miles at \$10,000	-	- 30,000
5	" 7,000	-	- 35,000
2	" 6,000	-	- 12,000
3	" 8,000	-	- 24,000

\$265,700
Contingent, at 5 per cent. 13,285

\$278,985
49 miles of iron plates at \$555 - \$41,895

\$320,880

3d,—By Hurricane Creek.

For the foregoing line from			
Mount Pleasant to Buffalo		\$164,700	
1	mile at \$6,000	-	6,000
2	" 10,000	-	20,000
8	" 8,000	-	64,000

\$254,700
Contingent, at 5 per cent. \$12,735

\$267,435
47 miles of iron plates at \$855 - 40,184

\$307,620

Columbia to Mount Pleasant.

As the point of departure from town, and the location of the depository in the village, demand some consideration, which will be hereafter determined by the board of directors, I have only to give the estimate of the intermediate ground, which I divide as follow :

2 miles at \$6,000	-	-	-	\$12,000
3 " 8,000	-	-	-	24,000
6 " 5,000	-	-	-	30,000

\$66,000
Contingent, at 5 per cent. - \$3,300

\$69,300
11 miles of iron plates at \$855 - \$9,405

\$78,705

Recapitulation of the different Lines.

South Line.

11 miles from Columbia to Mount Pleasant	-	-	-	\$78,705
54 miles from Mount Pleasant to Roche's Place	-	-	-	\$365,745
65 Whole amount	-	-	-	\$441,450

Middle Line.

11 miles from Columbia to Mount Pleasant	-	-	-	\$78,705
46 miles from Mount Pleasant to Cotton's Ferry	-	-	-	\$296,265
57 Whole amount	-	-	-	\$374,970

1st North Line.

11 miles from Columbia to Mount Pleasant	-	-	-	\$78,705
51 miles from Mount Pleasant to Jennings' Bluff, by the Valley of Cedar Creek	-	-	-	\$318,390
62 Whole amount	-	-	-	\$397,095

2d North Line.

11 miles from Columbia to Mount Pleasant	-	-	-	\$78,705
49 miles from Mount Pleasant to Jennings' Bluff, by the Valley of the Big Rock house Creek	-	-	-	\$320,880
60 Whole amount	-	-	-	\$399,585

3d North Line.

11 miles from Columbia to Mount Pleasant	-	-	-	\$78,705
47 miles from Mount Pleasant to Jennings' Bluff, by the Valley of Hurricane Creek	-	-	-	\$307,620
58 Whole amount	-	-	-	\$386,325

The foregoing estimates are made on the supposition that the company will follow the plan of construction adopted in the Charleston and Hamburg railroad, with some modifications and improvements indispensable in the rocky soil of Maury County, the steam power also being the only in operation for locomotion on the road.

It is very satisfactory to me, in closing this report, to inform you that your great and advantageous undertaking will be very well received in the community at large, and that the relinquishment of land and timber will be easily obtained in any direction where the railroad may pass. I take this opportunity also to thank two of your members, Messrs. P. R. Booker and Alexander Brown, who joined with me in that journey, regardless of the inclemency of the weather, or the difficulty of the roads. Their great knowledge of the country has been extremely useful, and their polite and kind attention very agreeable.

Report to the Commissioners of the Western Railroad, of the State of Tennessee, on the practicability, utility, and advantage of the project. By JOHN B. PETITVAL, Civil Engineer.

For the information of the public, we the subscribers, four of the Western Railroad Commissioners, beg leave to report, that with Col. Petitval, an experienced and scientific engineer, who has been engaged for the last five years in the general survey, location, and construction of the Charleston and Hamburg Railroad, now in operation, we have viewed and explored the country and ground from Jackson in the direction of Randolph, and of Fulton, and of the mouth of Cole Creek, and of Ashport, all on the Mississippi river, for the purpose of ascertaining the practicability of the establishment of a railroad from Jackson to the said river. And, we are satisfied, beyond a possible doubt, of the practicability of the project ; and that the expense thereof will be much less than has been generally supposed. But, for a particular detail on the subject, we refer to the

report of said Engineer, which is herewith submitted for public consideration.

BENJAMIN PARSONS,
JOS. H. TALBOT,
FRANCIS S. COLE,
JAMES ELROD.

Jackson, January 21, 1834.

To Col. Joseph H. Talbot, James Elrod, Francis S. Cox, and Benjamin Parsons, Esqs., Commissioners of the Western Railroad.

Gentlemen,—In conformity with your instruction of the 7th inst. directing me to make the preliminary surveys, exploration and reconnoitering, of several routes, in regard to the practicability of a railroad from four points on the Mississippi river, viz.:

- 1st. Randolph,
- 2d. Fulton,
- 3d. The mouth of Coal Creek,
- 4th. Ashport, to Jackson, passing by Brownsville;

as well as every statistical document and information which can be collected, in regard to the productions and resources of that part of the country, furnishing an adequate freight to the probable expenditure in the construction of said railroad, and the necessary engines to the same, I have the honor to report, that,

In taking advantage of the Low-ground at about half a mile below the town of Randolph, and following for about three miles the same valley in an eastern direction, deep excavations near the river-bluff will be unnecessary; the bridging over Indian Creek is of no consequence, but the crossing of the head waters of McLeomore's Creek, the country for two miles near Covington, the bottom and crossing of Hatchie river, over which a draw-bridge will be probably necessary, require minute observations to locate the railway on the most advantageous ground. The balance of the route following an undulating country gives the advantage of a graduated road.

The distance from Randolph to Brownsville is about 40 miles, reducible to nearly 37 miles; in adopting the mode of construction which has been used in the Charleston and Hamburg Railroad, of piles and sleepers as suitable to the different nature of the soil, and graduation, constructing also the road for steam power only, the average estimate is at \$3,850 per mile, making for

37 miles \$138,750
Contingent expenses at 5 per cent. 6,937 50

Whole distance from Randolph to Brownsville \$145,687 50

FULTON.—The bluff at Fulton requires some deep excavation, and the country for about four miles is hilly and broken; the distance to Brownsville, following the gradual slope of the hills of the north bank of Hatchie river, crossing Cane and Town creeks, and avoiding the head waters of Rhea's and Lagoon creeks, is about 36 miles, on the following average estimate:

Excavations \$4,000
6 miles at 5,200 . . . 31,200
15 do. at 3,850 . . . 57,750
15 do. at 4,000 . . . 35,000
\$137,950

Contingent expenses at 5 per cent. \$6,897 50

Whole distance from Fulton to Brownsville \$144,847 50

COAL CREEK.—The mouth of Coal creek presents a very high bluff, surrounded by hills which require great excavations. The distance to Brownsville is about 33 miles, following for the last 20 miles the same route as the Fulton line. The estimate is as follows:

Excavations, \$6,000
4 miles at \$5,550 per mile 22,200
4 do. at 4,675 do. . . 18,700
5 do. at 4,200 do. . . 21,000

5 do. at 3,850 do. . . 19,250
15 do. at 3,000 do. . . 45,000
\$132,150

Contingent expenses at 5 per cent. \$6,607 50

Whole distance from Coal creek to Brownsville \$138,757 50

ASHPORT.—The country from Ashport, on the bank of the Mississippi river, extends for about 7 miles on a low level ground, intersected by lakes, slough, cane brakes, partly overflowed every year, and exposed to inundation once or twice in the course of 15 or 20 years; leaving the low ground, the line of road will cross a very hilly country for about 5 miles, and a rolling ground for about 4 miles. The continuation will be by the same route as the two foregoing. The whole distance to Brownsville is about 31 miles, estimated at an average of \$4,475 per mile,

giving for 31 miles, \$138,725
Contingent expenses of 10 per cent. 13,872 50
\$152,597 50

As the foundation through the Mississippi bottom appears to me soft and unsettled, requiring mud sills or braces, I thought proper to increase the contingent expenses at 10 per cent.

JACKSON.—The ground one-fourth of a mile north of Brownsville being very advantageous, the line will pass that place at about that distance, and curving to the south follow an easy undulating country for about five miles; then taking advantage of some valleys in the eastern direction, retake a perfectly level land heading the waters of Cypress and Cub creeks. Johnson creek will be crossed without bridge by common piling. The bottom of the south fork of Forked Deer river being good and hard will be crossed also without additional expense; and a substantial bridge built over the river at a moderate price. The railroad reaching the west end of Jackson in a very nearly straight line of about 24 miles, at the average estimate of \$3,875 per mile; making . . . \$93,000
Contingent expenses at 5 per cent, 4,650

Whole distance from Brownsville to Jackson \$97,650

The ratios of the four points of departure from the bank of the Mississippi river and the different estimate to Brownsville are, viz.:

Distance 34 miles, amounting to \$145,172 50
Brownsville to Jackson 24 miles, 97,650 00

58 miles of wood construction, \$243,022 50
For the iron plates at the same price as for the Charleston and Hamburg Railroad, 17 tons per mile, at \$45 each . . . \$765
1000 lbs. of 5 inch spikes at 8 cents . . . 90
\$855

For 58 miles of road at \$855 each \$49,590
Whole amount of construction 292,612 50
The necessary utensils, and employments for the road are as follows:

2 Locomotive engines, \$5,500 each, . . . \$11,000
10 Freight cars, at \$110 each, and 1,100
4 Passenger cars, at \$400 each to an engine, equals \$2,700 x 2 . . . 5,400
4 Turnouts, with water stations, revolving platforms, &c., at \$500 each 2,000

For three depositories, with regular tracks, tools, work shops, offices, &c. 4,000

Engineer department, superintendence, surveys, &c. 18,000

\$40,400

Contingent expenses at 10 per cent. 4,040
44,440

Total amount of expenditures for the completion of the whole line of railway to be put in operation in the first quarter of 1837, \$337,052 50

In compliance with the second part of my instructions, I submit to you the following statement of exports and imports taken from the latest statistical data and information collected from the more enlightened farmers and merchants.

Madison county, 9,000 bales of cotton at a toll of \$1 40 per bale, \$12,600

Henderson county, 6,000 bales of cotton, at a toll of \$1 40 per bale, . . . 8,400

Carroll county, 4,000 bales of cotton, at a toll of \$1 40 per bale, . . . 5,600

Gibson county, 2,000 bales of cotton, at a toll of 1 40, 2,800

Haywood county, 8,000 bales of cotton, at a toll of 90 cents, . . . 7,200

Tipton county, including the cotton from Hardeman and Fayette counties, deposited at Covington, 10,000 bales at a toll of 40 cents, 4,000

Corn, flour, hay, oats, tobacco, lumber, &c., equal to one-fourth of the cotton receipts, 10,300

The imports are equal to the exports of cotton, as regards the toll, 40,600

Transportation of the daily mail, . . . 3,000

Passengers 6,000

Supposed receipt per annum . . . \$100,500

Yearly expenses; repairs on 58 miles of road, at \$75 per mile, \$4,350

Superintendence, salary of officers, clerks, laborers, &c. 15,000
\$19,350

Nett receipts per annum \$81,150

I cannot close this report without expressing all my gratitude to every settler whom I visited in Madison, Haywood and Tipton counties, for their prompt and accurate information received in regard to the undertaking, and their kind hospitality offered to me in every house; and among others, by Col. W. H. Henderson, Maj. John T. Brown, Maj. W. Conner, Col. Boulier, Col. W. Gilliland, R. C. Campbell, Esq., Henry Williams, Esq., and W. Potter, Esq., volunteering themselves as guides and pilots, without regard to the inclemency of the weather or the difficulty of the roads.

J. B. PETITVAL, Civil Engineer.
Jackson, Jan. 20, 1834.

[From the London Court Magazine.]
SUMMER SONGS, BY MRS. HEMANS.
(I) YE HOURS.

O! ye hours, ye sunny hours!
Floating lightly by,
Are ye come with birds and flowers,
Odours and the blue sky?

Yes, we come, again we come,
Through the wood paths free,
Bringing many a wanderer home,
With the bird and bee.

O! ye hours, ye sunny hours,
Are ye wafting song?
Doth wild music strain in showers
All the groves among?

Yes, the nightingale is there,
While the starlight reigns,
Making young leaves and sweet air
Tremble with her strains.

O! ye hours, ye sunny hours!
In your silent flow,
Ye are mighty powers!
Bring me bliss or woe?

Ask not this!—oh! ask not this!
Yield your hearts awhile
To the soft wind's balmy kiss,
And the heaven's bright smile.

Throw not shades of anxious thought
O'er the glowing flowers!
We are come with sunshine fraught;
Question not the hours!

DRY ROT.—An officer of the navy, now dead, was informed by the Rev. G. Williams, of Rhicolas, in North Wales, that it had been found, from long experience, that the water in the reservoirs for supplying the precipitate pits at the copper-mine works at Parry's mountain in Anglesea, has the property of preserving timber from decay and dry rot in a surprising manner, by the short process of steeping it therein a few weeks only, and that it has such a powerful effect in hardening the wood, as to blunt the sharpest tools. It, consequently, is found necessary to shape and fit the wood completely for the use intended, before it is put into this water for seasoning.

The water at Parry's mine is impregnated with copper, sulphuric and vitriolic acids. It is preserved in large reservoirs for supplying the precipitate pits, which are filled with old iron, that attracts the copper from the water.

It appears that the farmers, when they find their timber for agricultural purposes too green for immediate use, steep it for a few days in the copper-water, which has the power of extracting the sap, and fitting it for use properly seasoned.

I understand that a complete transmutation takes place in the iron, it gradually becomes incrustated with the copper, whilst at the same time the acids act as a corrodent; so that a piece of iron thrown in, after a certain time, comes out copper, but whether weight for weight, or size for size, I do not recollect.

The Admiralty, I believe, are in the possession of this information; if, however, the present method of immersing ships and timber in sea-water is successful in curing or preventing the dry rot, we certainly cannot obtain a more easy or cheap method for gaining the desired end. The component parts of sea-water, common salt, marine magnesia, and salenite, are very dissimilar to those of the mineral waters of Parry's mine, and it will be curious if both, nevertheless, produce the same effect upon wood.—[U. S. Journal.]

AGRICULTURE, &c.

[From the New-York Farmer.]

CREDIT—SHEEP.—There are two requisites to obtain credit, good character and business capabilities or habits. These are the poor man's riches. Credit, like all other good things, must be judiciously resorted to, and carefully guarded, otherwise it will prove a source of misfortune and pain. The following is from the Genesee Farmer:

Late in the summer of 1830, I borrowed \$100, and went into the neighboring towns and purchased sixty-eight sheep, at the average cost of \$1.30 per head, which left me remaining on hand \$13 of my borrowed money. At this time I had on hand twelve sheep, which, with those I bought, made me a flock of eighty head. The next winter I kept them on good fine hay, without any grain, until the first of March, when as the ground was bare, I quit feeding hay, and turned them out upon my old pastures, and commenced feeding a little corn. The winter of 1830-31, it will be recollected, was one of uncommon severity; but notwithstanding its length and coldness, I lost but one sheep, and that by casualty. I continued feeding grain until the first of May, when, as the grass had got a considerable growth, I thought it unnecessary and quit entirely. That season I raised thirty-six lambs, which increased my flock to 115. In June I sold the wool produced by my old sheep for \$150.06. I went and redeemed my note, and had left of money I received for wool \$44. The winter of 1831-32 I fed my sheep as before, but lost three head; consequently, in the spring, had but 112 to shear, which produced 300 pounds; this I sold at the very low price of 35 cents the pound, or \$105 for 300 pounds. The same season I raised 45 lambs, and sold 60 head of my old sheep for \$78.60; making the amount of sales from my flock that season

\$181.60. In the winter of 1832-33, I lost 6 sheep; in the spring sheared 91; but in consequence of the great proportion of lambs, the produce of wool was small. I retained a number of fleeces for home use, and sold the remainder (176 pounds) for 50 cents the pound, or \$88 for what I had to sell.

Thus it will be seen that my flock, for three years, has averaged 94 head, and that the actual sales from it have amounted to \$419. The last summer I raised 30 lambs, and sold none of my old sheep; consequently, in August last, when the three years had expired since my purchase, I had on hand 119 sheep, which is 25 above the average for three years past, and which 25 sheep were worth at that time \$2 the head—making \$50 for 25. This added to my sales would make \$469 for the produce of 94 sheep for three years, or \$156.33 for one—equal to \$1.66 per head annually.

I have made the following estimate of the expense of keeping 100 sheep for one year. I may be incorrect; if so, I hope some of your correspondents will correct me.

Twenty acres of good land, well turfed, will keep 100 sheep a year, viz.: five acres of meadow, producing two tons of hay to the acre, will winter, and fifteen acres of good pasture land will summer them. Twenty acres of land at \$40 per acre would cost \$800, and 100 sheep, at \$2 the head, \$200: making the cost of land and sheep \$1,000.

Interest on \$1000 one year, is	- - -	\$70.00
Cutting and securing 5 acres of grass	-	5.00
Thirty bushels of corn, at 4s.	- - -	15.00
One barrel of salt, at 16s.	- - -	2.00
Washing and shearing 100 sheep	- - -	5.00
		\$97.00

If the above estimate be correct, it will be seen that I have realized from my flock a net profit of more than fifty per cent. for three years together.

W. G. B.
Genoa, March 31, 1834.

DOG POWER.—John Farley, of Danville, Vt., advertises a patent "Dog Churn." He says, that churning is performed by the labor of dogs; and that the machine may be applied to other uses, such as turning grindstones and washing clothes. Women may now introduce "dog power" into their kitchens and dairy rooms, and seat themselves in the parlor.

APPLES IN ENGLAND.—The reporter of the Covent Garden Market, in Loudon's Magazine, observes that, apples are supplied altogether from our own growth; very few foreign have yet been imported, or are likely to be, as our own stock is yet very good: indeed, with tolerable seasons, we shall always have enough, as our plantations are now much extended, and, from the introduction of so many new varieties, generally more productive. Of pears we have no supply at present: it will require time, care, and attention, to effect a change in this article, equal to the present demand for it.

CULTIVATION OF VINES, Cucurbita cee.—Lay out your ground in hills four and a half feet asunder, each way, raising them considerably above the natural surface of the ground, with the hills inclined towards the south. Having prepared your hills you are ready to commence planting. Distribute no less than ten or fifteen seeds in a hill, covering them one quarter of an inch in depth. As soon as the plants have made their appearance, take of ashes or soot two parts, plaster one part, pulverized charcoal one part, mix these ingredients together, until the mixture is well incorporated. With this composition enter your garden or field, in the morning, while the dew is on, and with a quantity in your hand throw it over the plants, dusting them as much as possible, in order to suffocate the insects, taking particular care to dust the under part of the leaves:

By following these directions you will have the pleasure of seeing your plants in a thriving condition, and in a few days entirely out of the way of these troublesome insects.

As soon as the plants begin to interfere with one another, commence thinning them out. Pull out all but two or three in a hill, leaving those that look the most promising. There are many persons who leave no less than half a dozen in a hill; this is a *mistaken notion*, for I am confident that could you rest assured that no worms would molest the roots, it would be better to pull all out but one; and I am fully persuaded too, that you would gather more fruit from the vines where there was but one or two plants in a hill, than you would were you to leave half a dozen.

Where you leave too many, the vines will become so thick that, when they set for bearing, most of the fruit will decay before it comes to any maturity.—MILES BEACH. N. Lebanon, March 20, 1834.—[Goodsell's Far.]

PROTECTING YOUNG TREES AGAINST SWINE.—Dr. Dean, in his New England Farmer, after speaking of the great advantages of pasturing swine in orchards, adds, "when the trees are young, the swine will be apt to injure them by tearing the bark." We have been in the practice of planting out young trees, however, in an enclosure where not less than twelve or fifteen hogs continually pasture, and we meet with no such accidents or injuries. It is not owing to our swine being better bred than others, or that they have acquired any higher moral tone. Their love of mischief is occasionally exhibited, but not against our young trees. These they never touch, always keeping at a safe, and commonly at a respectful, distance. The secret (if such it be) is soon told. We only tie fast to the tree two or three stems of the sweet briar in an upright position.—[Gen. Far.]

ON SUCKERING CORN.—I had the pleasure, about four years ago, to spend a day in company with old Mr. Macon of North Carolina, when our conversation was principally on subjects of agriculture; and among others, the cultivation of Indian corn. After having inquired whether I had the suckers which grew from the roots of the corn pulled off, as is the common practice, and received my answer in the affirmative, he informed me that he had suffered them to remain, having, from repeated experiments, ascertained that they did not injure the corn; but on the contrary, the suckers more frequently than otherwise produced good ears of corn; and that if they failed to do so, there was an increase of fodder. I have since tried the experiment, and witnessed the following results. That after carefully examining the ears of corn on the stalks producing suckers, they were found to be as good as the ears on the surrounding stalks not producing them—that a large majority of the suckers produced good corn, though the ears generally were smaller than those on the mother stalk, and that (of course) there was an increase of fodder. Without entering into an inquiry, whether corn ought not to be planted so thick as to prevent its producing suckers, (if thick planting will prevent it, of which I am not sure,) or whether the pulling them off may not injure the corn, by inflicting wounds on the stalks, I can now safely recommend Mr. Macon's practice, as saving the time and labor of pulling off suckers, and what is of

more consequence, as producing an increase of the crop of corn and fodder. I ought to add, that none but the suckers growing from the root ought to be suffered to remain.—W. M. WATKINS. Charlotte county, March 20, 1834.—[Farmers' Register.]

TO DESTROY CATERPILLARS.—*Mr. Fleet:* If you think this worth insertion in your paper, it is at your disposal.

To destroy worms or caterpillars on fruit trees, take a gimblet and bore a hole about one-third of the way through the body of the tree, and then fill up the hole with the flour or sulphur, and plug up the hole tight. This will inhale through the tree in the sap. This should be done just as the leaves begin to put forth, and it will kill the worms as soon as they begin their work of destruction. I have tried it and found it worth my trouble.

O. G. BUTTS.

REMARKS.—The above is not new; but the effect assigned to the sulphur has been denied. Now is the season to repeat the experiment.

SORREL SAUCE.—Wash a quantity of sorrel, and boil it tender in the smallest quantity of water you can: strain and chop it; stew it with a little butter, pepper, and salt; and if you like it high, add a spoonful of gravy.

Be careful to do it in a very well tinned sauce-pan; or if you have a silver one, or a silver mug, it is far better, as the sorrel is very sour, especially in spring.—D. C.

TARRAGON is a fragrant, aromatic, perennial plant, cultivated in gardens, and used to impart a pleasant flavor to different dishes; to mix with salads, and for flavoring vinegar.

The common mode of increasing this plant is by dividing the roots.

The stalks grow from two to four feet high, and bear a strong resemblance to the common golden rod of the fields. One bunch is sufficient for a garden.

RYE IN THE GRAIN, AS FOOD FOR HORSES.—A friend, in whom I have every confidence, who is a gentleman of scientific acquirements, and a practical agriculturist, has just given me the following information, relative to horses' feed.

While travelling recently on one of our public roads, he fell in company with a farmer, from one of the northern counties of Virginia, and in the course of conversation the subject of feeding horses was mentioned; when the farmer observed, that for four years past he had pursued a new plan, greatly to his advantage, as well as to that of his horses. The new plan was that of feeding rye, in the grain, without grinding. He said, that after four years experience, he had become perfectly satisfied that less rye produced a better effect than if it were chopped or ground. After much difficulty, he had prevailed on some of his neighbors to try it; and thus, gradually, all the horse owners in his neighborhood had become converts, and now all fed rye in the grain; all agreeing that a large proportion of grain was saved by it, besides a marked difference in the condition of the horses for the better. He said, he could not give the "why and because;" it was different from the universal prescription of science, and the almost universal practice of intelligent husbandmen; but that the fact was before him, and challenged his belief in such a way, that to have continued incredulous,

would have been to shut his eyes against the most palpable demonstration. The best of this is, that an experiment is easily made, and, even if unsuccessful, cannot result in material loss. But should it prove to be true, that rye in the grain is better, or even as good as when ground, a considerable saving would result to the farmer, in avoiding the trouble and expense of going to mill. The farmer stated, that he had observed grains of rye passed off in the dung, but that they seemed to have left their substance in the body of the horse. In this he is doubtless mistaken; but may not the *modus operandi* of this new diet be explained thus: The grain that escapes crushing by the teeth prevents the mass in the stomach from concreting into lumps, and thus permits the free action of the juices of the stomach upon the whole. Persons afflicted with dyspepsia swallow white mustard seed, with great advantage; but I believe it is not pretended that the mustard seed has any other action than a mechanical one—that of keeping the contents of the stomach from forming a dense mass; keeping the food light and penetrable by the gastric juices, &c.

The anecdote was given to me in so earnest a manner, and by so respectable a gentleman, that I thought, as I was about writing to you, I would give it to you for insertion in the Farmers' Register. Very respectfully. GIDEON B. SMITH.—Baltimore, March 15, 1834.—[Farmers' Reg.]

CULTURE OF RAPE SEED FOR OIL.—Colchicum or rape seed is of the greatest importance, and produces an oil which is, and has long been, much wanted for manufacturing purposes. This seed is grown abundantly in all parts of Europe, and the oil made from it is extensively used in the process of manufacturing cloth: it is, I believe, the cheapest oil they have, and takes the place of common kinds of olive oil, which the manufacturers of this country are obliged to use at a great cost. This is a matter of great importance, when it is known that to every 100 pounds of wool carded there is consumed from two to three gallons of oil. The rape seed oil is so cheap and abundant in Germany, that it is much used in adulterating linseed oil; hence the bad quality of some of the German paint oils, as the rape seed oil does not possess the drying qualities of that from flax seed, and is therefore unfit for the purposes of painting, &c.

Having been for a long time engaged in the manufacture of flax seed oil, and having made various experiments on other seeds, I have, of course, had some experience on the subject. In relation to rape seed, I had an excellent opportunity of making full and satisfactory experiments. In the year 1822 or 1823, an English gentleman, who was familiar with the culture of rape seed, and who had a farm somewhere in the neighborhood of Salem, N. J. brought to my establishment about forty bushels of rape seed, which he had produced upon his farm. The account he gave of its culture was this. Two acres were sown with this seed (broad cast) in the month of August; it sprouted, and was growing very handsomely, but late in the fall the cattle broke into it, and, as he thought, completely destroyed it. He abandoned the experiment, and suffered his cattle to roam in it all winter; but in the spring, observing it sprouting again, he put up the fence, and as he expressed himself, "let it take its chance." The two acres, with this, as he considered it, unfair experiment, produced him about forty-four bushels of seed, for which I offered him four dollars per bushel, which he refused to take. I expressed it for him; and although my apparatus was not by any means perfectly adapted to the purpose, the manufacture differing in some respects, not necessary to state, from that

of flax seed oil, I produced three and a half gallons of oil per bushel. The cake, that is, the pulp, after the oil is expressed from it, he valued highly for fattening cattle, and refused to take seventy-five cents per bushel for it; the oil he sold to a woollen manufacturer for one dollar and thirty cents per gallon, thus, including the cake, realizing five dollars and thirty cents per bushel, out of which he paid the expense of manufacturing. It is, I am told, considered in England a profitable crop, although the price is not much, if at all, above two dollars per bushel. The gentleman was in high spirits as to the result, and told me he intended to go into the culture of it more extensively; but, from what cause I do not know, I have never seen him or heard from him since—whether he failed in his experiments, died, or returned to England, I do not know. I have not, however, the least doubt that our soil and climate are well adapted to the culture of this seed; it is of the same family with the cabbage, which every one knows grows luxuriantly here. We have, besides, such a variety of soils and climates in our country, that if it will not succeed in one district it certainly will in some other.—[Journal Franklin Institute.]

SPRING AND WINTER VETCH.—"It is impossible to distinguish a difference between the spring and winter vetch seed; but if any imposition is practised on a farmer by his seedman, it may be detected as soon as the plants spring up; the winter vetch comes up green, and the spring vetch of a deep brown purple color: this observation may be useful, as it enables the farmer, in case of sowing a spurious sort in the autumn, to detect the imposition: if he finds he has sown the spring kind at that time, he must plough his land again, and apply it to some other purpose, for the spring kind will not stand the winter. I should recommend every farmer purchasing the winter vetch to have the seed warranted; and when he has got the right sort, afterwards to raise his own.—[R. W. Lloyd.]

BLOODY MURRAIN.—About two years since, Mr. Benjamin Bailey, a farmer of the town of Clarence, Erie County, handed us a statement of an examination which he made (assisted by two of his neighbors, Col. Miner and Mr. Goff,) of a cow which he had lost by the above disease, which has proved very common and fatal to cattle in this section within a few years. The statement was mislaid at the time—but having been accidentally discovered a few days since, we think we cannot do a better service to the farming community than to lay it before them, as the season for the disease is approaching, and by knowing what is, *probably*, the true cause of it, they may be enabled to guard against its effects.

Mr. Bailey states, that on opening the cow he found about two pails' full of blood in the stomach; the liver was completely rotten, covered with purple spots, and full of holes, filled with clotted blood. On searching the liver in the direction of these holes, he found a dead worm, similar to that which produces the butterfly, and a *live leech*. The liver was perforated in all directions, and a hole made through the main artery, near the gall, about large enough to admit of a pipe stem. When the holes came near the skin of the liver they ran off in another direction, as though the animals making them had turned back—and it was where these holes thus approached the skin, that the purple spots on the liver were visible. The leech lived about twelve hours after it was taken from the liver.

As several of Mr. Bailey's cattle were affected in a similar manner with the cow which died, he prepared a draught of alum and sulphur, and gave it to them, which soon relieved them.

Mr. B. imagines that the cattle swallow the leeches when drinking from stagnant pools of water in the warm season, when the streams are in a measure dried up.—[Lockport. Cou.]

The following account of the proceedings of a meeting held in Tennessee, together with the reports of Col. Pettitval, also published in this number, will show the degree of interest felt in that section of the country.

RAILROAD CONVENTION.—At a convention of Delegates from the Counties of Madison, Hardeman, Fayette, McNairy, and Shelby, held in accordance with previous notice, at the Court-House in the town of Bolivar, on Friday the 11th day of October, 1833: the convention being called to order, on motion of Wm. B. Turley, Esq., of Hardeman, Gen. E. P. Gaines, of Shelby, was unanimously chosen President, Col. Jas. Trezvant, of Fayette, Vice President, and R. A. Parker, of Somerville, appointed Secretary.

On taking a list of the members present, it appeared that the following counties were represented in this convention, viz.: Madison, McNairy, Hardeman, Fayette, and Shelby.

From Madison—Messrs. Milton Brown, S. J. Hays, and A. R. Heron.

McNairy—Col. John Deberry.

Hardeman—Messrs. Wm. B. Turley, Gen. Jones, David Fentress, E. R. Belcher, J. J. Williams, Gen. J. C. N. Robertson, J. H. Bills, Levi Joy, E. W. Kenny, W. J. Riddle, E. D. Tarver, T. Shaw, A. Kirkpatrick.

Fayette—Messrs. Lewis P. Williamson, W. Gray, James Hamilton, B. M. Patterson, Col. James Trezvant, Durant Hatch, Wm. Davis, West H. Humphrys, D. J. Johnson, James Ruffin, and R. A. Parker.

Shelby—Messrs. Adair R. Alexander, Gen. E. P. Gaines, John Pope, Robertson Topp, David Dunn, Joel W. Royster, and Isaac Rawlings.

E. R. Belcher, Esq., of Hardeman, presented the following resolutions:

Resolved, that a committee, composed of one member from each county, be appointed to take into consideration the purpose for which the present convention was called, and to classify the order in which the business of this convention shall be conducted.

Which resolution being adopted, on Saturday morning the convention met according to adjournment.

Kemp S. Holland, a delegate from Fayette; W. Howard, a delegate from Hardeman; H. B. Mitchell, a delegate from McNairy; Gen. Jacob Tipton, Major D. A. Dunham, Nathaniel Potter, Marcus Calmes, Philip B. Glenn, and Major A. Morehead, delegates from Tipton county, appeared, produced their certificates, and took their seats as members of this convention.

The committee to whom were assigned the duty of drafting resolutions expressive of the purposes for which the convention was called, through their chairman, Gen. E. P. Gaines, made the following report:

1st. Resolved, as the opinion of this meeting, that a railroad between the Mississippi river and the Atlantic Ocean, to pass through the south-west border of the State of Tennessee, the northern parts of the States of Mississippi, Alabama and Georgia, and the southern part of South Carolina, is practicable and desirable; that its anticipated local benefits and national advantages may reasonably be estimated as greatly to exceed the whole expense of its construction, and that it ought to be commenced forthwith.

3d. Resolved, as the opinion of this meeting, that the proposed work, as a measure of national defence, would contribute more, by the facilities it will afford in the transportation of troops and munitions of war to the protection and security of the south-eastern States and East Florida, than all the fortifications constructed or designed to be constructed south of Chesapeake Bay; for it is obvious to every man of military mind that the strongest of fortifications must depend mainly for defence and preservation on prompt and seasonable supplies of fighting men, with arms and subsistence; and that these cannot be promptly wielded from the interior to the frontier without good

roads, railways, canals, or large navigable streams—and a railway will cost much less than a McAdamized road.

4th. Resolved, as the opinion of this meeting, that the proposed railroad, in a political point of view, will be found to be one of the strongest links in the chain of the union of the twenty-four States.

And whereas, the growth and prosperity of the western district of Tennessee would be greatly promoted by the construction of a railroad from the interior of the district to the bank of the Mississippi river; and whereas, union of action is necessary in order to give success to the enterprising efforts making to effect that desirable object, we, the delegates representing our respective counties, do therefore

Resolve, that we will unite in petitioning the legislature of Tennessee to grant a charter to a company to be formed for the purpose of constructing a railroad from Jackson, in Madison county, to the Mississippi river, at Memphis, or to any other point on said river which the company may designate, or permitting said company, if they should find it necessary to do so, to run said road so as to intersect the contemplated road from Memphis to Tusculumbia, leaving the route said road is to run to the determination of the stockholders, voting according to the number of shares held by each.

After a warm and lengthy discussion, in which several gentlemen took part, the resolutions were finally adopted.

Five counties, viz.: Madison, McNairy, Hardeman, Fayette, and Shelby, voting in the affirmative, and Tipton county alone in the negative.

Judge Turley, of Hardeman, moved to strike out all after the word railroad in the sixth resolution, and insert the following: "commencing at or near Memphis, in Shelby county, and running thence to Jackson, in Madison county, over the ground that may be selected by the agents of the company," which amendment was adopted unanimously, without discussion.

The convention then adjourned *sine die*.

EDMUND P. GAINES, President.

R. A. PARKER, Secretary.

We are indebted to Capt. Tinsley, of the brig Hunter, for Panama papers to March 23d, inclusive.

A subscription of \$90,800 had been made in Panama for the construction of a rail road from Porto-bello to Panama, i. e. from the Pacific to the Atlantic. The speedy achievement of the undertaking was considered certain.

A gentleman by the name of Ventura Marroguin, has discovered a passage from Cruces to Porto-bello, i. e. from sea to sea, in a great measure free from hills, which can be accomplished, and which he has actually accomplished, in less than one day. The paper before us anticipates immense advantages from this discovery, and says it will be one of the most splendid triumphs which the Isthmus could achieve for commerce and civilization. The authorities of Panama had sent a commission, accompanied by Mr. Marroguin, to explore more fully the route referred to.—[Jour. of Com.]

INLAND NAVIGATION.—From the New-York Observer, we make an extract from the proceedings at the recent anniversary of the Seamen's Friend Society.

Mr. Peet, in moving the second resolution, presented an interesting statistical view of the canals, rivers, lakes, and inland navigation, of the great west. In New-York alone, he said, the canals now completed and in operation extend 500 miles through a populous country, having on their banks 100 villages and cities, and bearing on their bosom 1,800 boats, navigated by between 10 and 12,000 men. The great lakes were also navigated by numerous large vessels the number on lake Erie alone being 170, including 30 steamboats. Passing through these lakes, and the Ohio canal, on which the number of boats and boatmen is increasing with great rapidity, we come to the river Ohio which stretches a thousand miles through a fine country to the Mississippi, the father of

rivers, with its twenty-three tributaries, affording navigation for 8000 miles in various directions. The whole line of inland navigation in the United States, including canals, rivers, and lakes, Mr. P. estimated at 20,000 miles, and the whole number of boats employed on these waters at between 6 and 7,000, viz. 4,000 flat boats, 2,000 canal boats, between 3 and 400 steam-boats, and 200 sloops and schooners. The number of men employed in inland navigation is 60 or 70,000, and the number of passengers transported annually is more than 200,000. Through nearly the whole extent of this immense line of navigation, Mr. P. said, the sabbath is shamefully violated. With few exceptions the arrangements of men of business were such as to require the labor of the boatmen and others connected with inland navigation on the Sabbath, as on other days, and thus they were deprived of the opportunity of receiving religious instruction, and the way was prepared for the introduction of every species of immorality.

ON THE BURNING OF WATER.—From a recent number of Silliman's Journal, we copy the following respecting the "American Water Burner," which we have several times mentioned. We omit several pages of theoretical reasoning, and confine our extracts entirely to the results.

"The experiments which I have made have proved practically, that an engine with a power equal to driving a boat four miles an hour, and a railroad car twice that distance in the same time, with ten or twelve passengers, may be made for one hundred dollars: and that the engine with its preparing vessel (a substitute for the boiler in the steam engine) need not weigh one hundred pounds—and the expense of working it will not exceed ten or twelve cents per hour. There are certainly no difficulties to be removed. These facts have been verified practically and repeatedly before hundreds of people.

"Some recent improvements in the mode of constructing lamps for burning water, to produce light and heat, have perfected the operation for these purposes. It now carries demonstration in every form. For instance, when you put by one fourth of a gill of spirits of turpentine into the lamp, and as much water, and raise the temperature to less than that of boiling water, the vapor that comes over will be in the ratio of about equal parts of each. If, in the combustion of these vapors, a due proportion of air is mixed and inflamed, it will in a few minutes boil a two quart copper tea kettle. If small brass wire is brought over and in contact with the flame, it instantly drops in pieces—small copper wire is readily melted—fine iron wire, if the proportion be right, is instantly inflamed—and thin sheet copper, with a small piece of silver, or silver soldered on it with borax, being exposed to the same, the silver melts in a few seconds, and the copper very soon; and this is done while the vapor is not concentrated in any way, and issues only with a velocity about the same as that of gas in gas lights.

"This discovery gives every promise of supplying a much cheaper fuel, (as a fuel,) exclusive of a clear saving of light, than any one now in use. It is my intention to introduce my lamps, &c. into use as soon as I conveniently can."

The following remarks by Professor Silliman will show how much importance may be attached to these discoveries:

"We have seen some of Mr. Morey's experiments, and can testify to the correctness of his statements, as regards the great amount of heat and light evolved by combustion of the vapor of water mixed with that of spirits of turpentine, or alcohol, and duly modified by common air. The results are very striking and beautiful, and we can see no reason why they should not prove of great practical utility."

NEW-YORK AMERICAN.

MAY 17—23, 1834.

LITERARY NOTICES.

No. XXIV.

Upper Mississippi, February, 1834.

I hardly know whence to date this letter, unless it be from the sources of the Sinsinnoway, between Prairie du Chien and Galena. I left Prairie du Chien in a furious squall of snow, which, violent as it was, however, could not affect the politeness of the young officer, who insisted upon driving me 6 or 7 miles, to the banks of the Ouisconsin, in a cariole. A gentleman who fills a civil station of some importance on the frontier, while he also acts as sutler to the post at Fort Crawford, was waiting for me at the crossing place, where several squaws, with immense packs sustained, after the usual Indian fashion of carrying burthens, by a band around the forehead, collected with two or three Frenchmen, and half breeds, under a shed appertaining to a large stone mansion on the immediate bank of the river, gave to the place the appearance of an extensive trading establishment. Entering the house for a moment, I found two rather pretty and very well dressed young girls of sixteen or eighteen, whose raven locks and eyes of jet, alone proclaimed their half blood origin. One of the ladies sketched; and we had just got into a discussion upon the plates of a new English Annual which she had in her hands, when a call from without compelled me at once to bid my friend farewell, and leave him the agreeable task of entertaining the backwood beauties by himself. I have, at different places on the frontier, seen some of these half-breed fair ones, the piquancy of whose charms would excite no slight sensation in the gay circles of the Atlantic States. But, like the full-blooded Indian females, they lose their beauty very soon: like them, too, when faded, they exhibit a harshness of feature which is almost forbidding. An aged Indian has often something interesting and even attractive in his countenance, but an aged squaw, or one even in whose face the light of youth no longer lingers, is any thing but prepossessing—is even haggish. It is to this frail and fleeting condition of their charms, the early desertion of their husbands, whether red or white, is chiefly to be attributed: for the affection, the tenderness, the devotedness of an Indian girl to her lover know no bounds, and her truth is beyond impeachment. In the strange intermixture of population on the frontiers, these qualities are of course of tender tried and better tested, than in those distant wilds where the Indian still roves free from the perilous influence of the white man, untaught in those principles of morality which are made to depend upon degrees of latitude and longitude, and unskilled in that system of dealing which takes its color of fairness according to the blood of the person dealt with. I have said that, though their features are not often regular, there is at times something very attractive, even to piquancy, about them. You would think so, I know, could you see one that I have in "my mind's eye" at this moment.

I have fallen in with so many straggling parties and broken bands of different tribes upon the borders, any where between Detroit and Prairie du Chien, that it matters not to say at what point I had an opportunity of studying the large, dark, and eloquent eyes that beam in swimming lustre before me. The straight forehead is, perhaps, a thought too low; and yet, while those tresses, dark as night, are gathered so far away from its broad polished surface, it were too masculine if an atom higher. I said her features were not regular; the nose is too *retroussé* for a sculptor's model, yet never did his chisel set that feature with more beautiful distinctness. Between a pair of clear and pencilled brows, like those. How much of manhood's force and woman's fondness dwells around that mouth: and when its dewy portals disclose teeth, whiter than "snow upon a raven's wing," one need not be a Mahometan, to fancy Houris' lips, like those. But what shall I say of her figure? It is too much below the standard height to create a sensation in a ball-room; and the untrained waist, were it not for the plump though falling shoulders, and full outline above,

would not appear too slender to dispense with some of Mrs. Cantelo's discipline: yet such a form would Hebe choose, should she roam the world for a new tenement to dwell in.

To repeat the unspeakable and ludicrously expressive name of this Indian beauty, would destroy any interest this attempt at describing her may have created; and I am half disposed to steal the finely appropriate name of a Menominee belle, strongly resembling her, who is called *Mochechéwon*, or "The Bubbling Spring."

But I am too long a truant from my fellow traveler. We descended the steep bluff together, and got upon the now frail ice of the Ouisconsin, by means of poles and pieces of loose timber thrown out from the shore, while we slid our baggage upon a smooth board over a broad opening near the margin of the rapid current. Once on the main body of the ice, I was dragged over in a train by Indians, while a Canadian or two went ahead with long poles to try the ice, and then on reaching the opposite shore the same ceremonies being repeated, we after some delay made good our landing. A tall, ricketty old Barouche, (I should as soon think of driving an ox cart into my bed room, as bringing such a machine among these hills at this season) stood waiting for us in a frozen swamp; after stowing our baggage, and making the crank craft shorten sail by lowering the leathern top, we got fairly under way. We had not gone a mile before the swingle-tree broke, while crossing a brisk stream, and our driver having repaired the difficulty after an hours delay in a heavy snow storm, by cutting a piece of timber with his knife from a grove at hand, we started afresh, and reached the foot of the bluff by which you first descend into the valley of the Ouisconsin, at about three o'clock. The ascent—perhaps two hundred feet high, was in two pitches, either of which, on a summer's day, would trouble a man to walk up, who wanted wind and a firm tread. They were now covered with fresh snow, having an underlayer of smooth ice, created by the previous thaw, and the office of our two half-starved horses in getting up the old barouche, you may readily imagine, was no sinecure. The driver (from my own State) was a forward, two-third witted sort of a chap, grafting the impudence of a New York hackney coachman upon the not disagreeable freedom of Western character, and having a head coated without with a mass of hair, which curled so tight as to keep his eyes always open on the stars, while it was lined within with an accumulation of conceit that swelled his cheeks nearly to bursting, yet bold, active, and with all his disagreeable familiarity, probably meaning well. His two nags (which looked like frames of that interesting quadruped, the horse, set up for further finishing, he honestly believed, with Goldfinch, were "equal to any pair of tits that ever touched harness;" and therefore treated our suggestion that they would not be able to make good their footing to the top of the hill with just disdain. Like Bonaparte, however, he paused to harangue his forces before scaling the Alps: "Now, you, Doctor, be careful how you tread, you infernal villain—and Fanny, you know better, you hussy, than to let the Doctor be always a-dragging you his side the road—now go ahead. G—d— you!" This pithy address seemed to be as well understood by the sagacious brutes, as if our friend had spoken in the Hounhym language, like Gulliver himself. The learned M. D. and the gentle Fanny gave such a violent start, that what with our pushing behind the vehicle and our conductor's urging them on with an enormous ox-goad before, the first ascent was, with much floundering, soon made good: but they could no more.—Like Saunders Supplejaw in Quentin Durward, "there they stuck." They did indeed make little excursions up the side of the hill, but it was only to slip back to the same place. Nor did I wonder at it. I was obliged myself to climb the slippery steep on my hands and knees, at the risk of having my neck broke by the floundering horses, who once nearly gained the top, when their footing giving way, they came tumbling down, carriage and all, jumbled together like the picture of Phæton's mishap in the school edition of Tooke's Pantheon. In this last attempt they fortunately broke the carriage, or we might have cooled our heels on the spot till midnight. In the existing wreck of matter, however we determined at once to mount the two horses' bare backs, while our conductor should try and keep up with us on foot till we gained the house of a settler some six or seven miles off, and could send back a conveyance for our baggage. The horses being with some difficulty led up the hill, our conductor began at once trying the strength of his legs, by kicking the poor brutes in their ribs, an application

which the Doctor took with as much quiet as if he felt that he deserved it for his mal-practices. The gentle Fanny, however, seemed determined to show her humane master, that however he might excel her in the use of the whip, she was more than a match for him when it came to a flourish of heels; and accordingly, she handled her hoofs with such dexterity that one of them descended so plumply upon the epigastrium of the offending conductor, as nearly to drive the breath out of his body. He recoiled a few paces in the snow, but did not seem the least hurt, while I mounted his assailant before another round could be had between the combatants, and my companion taking the other horse, we all pushed off together as fast as we could from the scene of our misfortunes. Commend me to an afternoon's canter on the back of a broadsword, but never let my limbs cross the naked chine of such a beast again in a trot of six miles. My companion dismounted and walked a part of the way, but I clung to my bed of down the whole of the route, twisting and turning the whiles thereon at a rate that made the wolves—of which we passed several—stop and stare at me, as if I had the St. Vitus' dance. The cabin at which we stopped belonged to an emigrant originally from New Hampshire, but now for fifteen years a rover in the West. From his present residence he had been several times driven off by the Indians, and of course like most of the settlers, hated them cordially. He had two or three loaded rifles suspended by wooden hooks over his fire place; and assigned to me as a reason for keeping them always thus ready, "that he was a lone man, and didn't want any rascally Indian to come snooping for hogs about his place."—"Surely, sir," I observed, "you would not shoot them unless they did you mischief?" "Why, I don't say as to that stranger, but the varmint give us a heap of trouble; and I'd rather for their own sakes that none of their rifles would come cracking about my door." "Well, I always get rid of the red devils," pursued an old backwoodsman, standing by, "with out shooting any on them, and its only by catching two that came hunting near me last spring, and making them understand that they run a smart chance of their lives if they ever come within rifle shot of my cornfield again. Government's bought their land, and it's wrong for them to be cavorting round quiet people's houses any more."—Contrast such views and feelings with the hospitable conduct toward the Indians, of recent settlers from your own State, which I have commemorated in former letters, and you will for the moment feel a glow of pride for the generous dealings of the New York emigrant. Examine the subject deeper, and that just pride will not be diminished, but you will at least have charity for the startling creed of the old backwoodsman.

The cause of the existing hatred of many of the old borderers to the very name of Indian must be sought for far back in the bloody annals of our frontiers. Its origin may there be found in the fierce collisions, the midnight burnings, the massacres and cruel devastations which are familiar to us in a thousand tales of our infancy. The bitter feelings, the recollection of wrongs committed or incurred—of vengeance wreaked or reaped in these desperate scenes,—have lived for generations in the families of their daring and much enduring actors. In the solitary life of a frontier-man, so far removed from the ordinary objects which engage the thoughts of men of his class in thickly-settled parts of the country, they form his chief subject for reflection, when roving the forest, or laboring alone in the field by day, and they are the theme upon which he descants when his young offspring gather around their humble hearth by night. His children drink in the black story with all the greediness of infant ears, and when wishing for the detail of further horrors, they are placed perforce by their mother on their pallet of straw, she stills their cries by whispering the name of some dreaded Chieftain in their ears—as I have more than once myself heard the name of Black Hawk used to still the murmurs of a nursing. The lessons thus taught are ineradicable, while the accumulated passions and prejudices of generations are thus transmitted and kept alive. A peculiar class of men is thus created, or rather was created, years and years ago;—a class of men as distinct in many respects from the more happily situated inhabitants of countries sheltered by the strong arm of the law, as if it had its birth in another planet; and the chief characteristic of its members is—(I do not speak ironically)—that they have two consciences—one for the white and another for the red man. You smile credulously at such an anomaly in morals; but however paradoxical it may appear upon paper, it is a fact as notorious as the open day that there have

been and are men on the frontiers, whose dealings with civilized society, whose general humanity, whose exact attendance even to their religious duties, are such as to ensure them respect, if it did not give them weight, in any well-ordered community, and that with these very men the rights and privileges, the property, the life of an Indian, do not weigh a feather. For some most remarkable and deeply interesting facts in relation to this strange incongruity of disposition, I refer you to several admirable articles on frontier life and "Indian Hating" in the back numbers of Judge Hall's *Western Magazine*.*

Now this is the class, bold, enterprising and hardy, true to each other, and just and hospitable to the white stranger, but having no place in their system of doing good for the unfriended Indian, which since the English settlement of the back countries, have been brought continually in contact with the original possessors of the soil. They alone are the real pioneers. Wave after wave of Western immigration has rolled from our cultivated coast over the Alleghanies and the Mississippi, but while each shot beyond its predecessor, and left it settling far behind, it has only thrust in advance, it has never absorbed, or commingled with, the distinct and narrow currents that first led the way. These pioneers do indeed continually penetrate beyond the immediate Indian boundaries, and there, as is the case in the Peninsula of Michigan, you may see the hereditary enemies they have left behind living upon the kindest terms with the new white population that succeeds, until their land becomes so valuable as to be coveted by their neighbors, when government steps in and removes them once more to struggle with their old enemies beyond the border. Driven from their favorite hunting grounds—torn from the graves of their fathers—(and the attachment of an Indian to the last is like his love of vengeance and his propensity for gambling, and his devotion to spirituous liquor—when once tasted a perfect passion with him)—he goes to dwell among a strange and often a hostile people, with whom his unremembered and broken tribe soon passes into a by-word. There, generally, the terms he is upon with the scattered pioneers that often have reached even that remote place before him, preclude him from a market for his venison and skins in his immediate neighborhood. And if he does not take to shooting his white neighbors' hogs, and get brought down himself by a rifle ball in return, he wanders off to some distant trading post, where he either runs himself incurably in debt by taking goods at credit from the American Fur Company, at a thousand per cent. above their market value, or else learns from the Scotch and English trader to love the *Sagarnash* and the *Chemocomon*, and to go with the various tribes within our borders, which the British Government at this moment religiously keep in their pay, to receive arms and presents at Malden, and to hold himself ready to join the first marauding party of his red brethren which shall raise the warwhoop on the border, and add new venom to the deadly feud of the pioneer. Sometimes indeed he becomes a dealer in small peltries on his own account, and usually visits the home of his childhood, where some thriving village has in the meantime sprung up, to dispose of the fruits of the chase, and get his supply of little necessities in return. Several instances of the last were mentioned to me at the pretty hamlets of Ottawa and Hennepin, on the Illinois, where I was told that the storekeepers dealt with different Indians, whom they had repeatedly trusted to the amount of several hundred dollars for the term of a year, without their confidence being ever abused. But the Indian returning hence to his wildwood haunts, still in passing the frontier avoids the beings between whom and himself there is such a fearful account of mutual wrong and injury left unbalanced; and if he lies down at night beneath the shelter of a white man's roof, it is one that covers the family of some new wanderer to the west, to whom the wild deeds of frontier life are only known through the softened medium of fiction, as a tale of other days. But much more likely is he,

if his blanket alone be not his bed, to betake himself to some tenantless mansion, where the charred shell of what was formerly the family dwelling of a once happy but now desolated pioneer, blackens the lonely heath. Here, while the prairie blast whistles through the gaping timbers, the Indian, crouched upon the floor, where the feet of his red brothers have slipped in the blood their ruthless hands have shed, may well be supposed to exult in the demoniac feelings of gratified revenge, so dear to his race, to brood through the hours of midnight over the accumulated wrongs under which he believes himself to be suffering, and to emerge from his gloomy lair in the morning, eager for an encounter that may relieve his swollen feelings. Imagine now the white man, who once thought himself the possessor of that spot;—he, the ruined parent of that shattered home, hanging around the only remains of all that was dear to him! and then conceive what would be the meeting of two such beings. There is not another touch required to the picture;—and yet it is no picture; it is reality. The deserted dwellings I have seen again and again. The stories connected with them are so familiar in their neighborhood, as to be told without emotion. The state of feeling they keep alive among the whites I have already explained. The isolated condition of the Indian is also too well known.

But enough of this for the present; when I have delivered the letters which I have for individuals high in the Indian department further down the country, you shall have my own crude notions in relation to our national policy toward this singular people.

Having recovered our baggage, I started with my fellow traveller at about ten o'clock the next morning, in a jamper, trusting to his knowledge of the different groves, which are the landmarks of the prairies, for finding our way to a neighbor's, between thirty and forty miles off. We had proceeded a very few miles, when every sign of a trail being snowed up, we became completely lost, and wandered over the prairie for eleven hours; sometimes, indeed, we would get a snatch of a track where the snow had drifted it bare, but a few moments afterwards we would be driving just as much at random as ever.—The night at last closed in extremely cold, and the wind swept over the prairie so piercingly, that the very wolves seemed to shiver as they stood looking at us in the bright moonlight—(the number and impudence of these rascals on the prairies is almost incredible)—but the glorious sky above us seemed to lend some of its influence to our spirits; and, so long as our poor horse held out, we determined to keep on. His strength, however, began to be too much tried as we passed along the mouth of a number of ravines scooped out of the prairie, and descended occasionally into the groves that filled them, to see if we could discover a house. The wearied brute seemed so loathe to leave the last one we entered, that, after pausing and hallooing in vain for sometime, I proposed that we should turn him loose to browse on the trees, and, making a fire, lay down in the snow for the night. My friend preferred trying one more ravine for the house, as we were both very sharp set; and, starting anew to take a short cut up the hill side, we came to the brink of a narrow and deep gully, which my companion got out to examine. "Jump him over," he cried.

"Jump the devil!—the horse can hardly step."

"Try him."

"He'll break the jumper."

"Then we'll camp upon the spot."

The grave echoed with a single application I made with a flat stick to the poor brute's back, and the flying car (emphatically a jumper) landed safely with me in it on the other side of the gully. We gained the open prairie once more—heard the bark of a watch dog—and descending another ravine, were comfortably housed, an hour before midnight, in the log dwelling of a miner. H.

AN ESSAY ON NEW TRIALS, by DAVID GRAHAM, Counsellor at Law. *New York: HALSTEAD & VOOKHES.* 8vo. pp. 636.—"The principal object of this work is to aid the junior members of the profession, in a branch of practice of daily occurrence."—The arrangement of the work appears well suited to accomplish the object announced in the first sentence of the preface, which we have extracted above. The work is divided into sixteen chapters; the first thirteen of which are devoted to the various grounds of motion for new trials, as, for example, want of due notice of trial, irregularity in impanelling the Jury misconduct of the party or his Counsel on the trial—misconduct of the Jury—defects of the verdict as

being void or against law, or against evidence, or by reason of the damages, &c.

The fourteenth chapter is devoted to applications for new trials, in what are termed "Hard Actions," under which head are classed actions arising *ex delicto, qui tam*, and *penal actions*, and criminal cases.

The fifteenth chapter relates to applications, after two trials, and trials at bar; and the sixteenth to applications in Equity, "after verdicts on feigned issues and issues at law."

The subject is one with which we are personally little conversant; but of the execution of the work, and its general accuracy and fidelity, we willingly accept the experience of its author, whose name has been long known at the bar, as a sufficient guarantee.

THE PHILOSOPHY OF SLEEP, by Robt. Macnish; 1st American edition: 1. vol.; N. York, D. APPLETON & Co.—Is not this, gentle reader, a very taking title—"the Philosophy of Sleep!" and does it not forthwith set the waking faculties upon inquiring into that state, which the author denominates "the suspension of animal life," during the continuance of which "the creature is under the influence of organic life alone?"

Such, we think, will be its general effect, and we may promise in all safety, that whether philosophers or not, those who take up this volume will find themselves both instructed and interested by it.

We make a short extract about dreams:

There is a strong analogy between dreaming and insanity. Dr Abercrombie defines the difference between the two states to be, that in the latter the erroneous impression, being permanent, affects the conduct; whereas in dreaming, no influence on the conduct is produced, because the vision is dissipated on awaking. This definition is nearly, but not wholly correct; for in somnambulism and sleep-talking, the conduct is influenced by the prevailing dream. Dr. Rush has, with great shrewdness, remarked, that a dream may be considered as a transient paroxysm of delirium, and delirium as a permanent dream.

Man is not the only animal subject to dreaming. We have every reason to believe that many of the lower animals do the same. Horses neigh and rear, and dogs bark and growl in their sleep. Probably, at such times, the remembrance of the chase or the combat was passing through the minds of these creatures; and they also not unfrequently manifest signs of fear, joy, playfulness, and almost every other passion.* Ruminating animals, such as the sheep and cow, dream less; but, even they are sometimes so affected, especially at the period of rearing their young. The parrot is said to dream, and I should suppose some other birds do the same. Indeed the more intellectual the animal is, the more likely it is to be subject to dreaming.—Whether the fishes dream, it is impossible to conjecture: nor can it be guessed, with any thing like certainty, at what point in the scale of animal intellect, the capability of dreaming ceases, although it is very certain there is such a point. I apprehend that dreaming is a much more general law than is commonly supposed, and that many animals dream which are never suspected of doing so.

Some men are said never to dream, and others only when their health is disordered: Dr. Beattie mentions a case of the latter [description]. For many years before his death, Dr. Reid had no consciousness of ever having dreamed; and Mr. Locke takes notice of a person who never did so till his twenty-sixth year, when he began to dream in consequence of having had a fever. It is not impossible, however, but that, in these cases, the individuals may have had dreams from the same age as other people, and under the same circumstances, although probably they were of so vague a nature, as to have soon faded away from the memory.

Dreams occur more frequently in the morning than in the early part of the night; a proof that the sleep is much more profound in the latter period than in the former. Towards morning, the faculties being refreshed by sleep, are more disposed to enter into activity: and this explains why, as we approach the

* "The stag-hounds, weary with the chase,
Lay stretched upon the rushy floor,
And urged in dreams the forest race
From Teviot stone to Eskdale-moor."
Lay of the Last Minstrel.

* If I am not very much mistaken the records of the criminal Court in the county of Montgomery, State of New York, will supply some facts in relation to Indian Hating nearer home. I think it was last October only that I saw a statement in a Johnstown newspaper in relation to an Indian murder committed by an old man of sixty, who had been in past years tried and acquitted by Mohawk juries, several times, upon different indictments for Indian murders. He destroyed his victim, whom he had never seen till that moment, by picking him off with his rifle, while fishing in his canoe between two white men.

hours of waking, our dreams are more fresh and vivid. Owing to the comparatively active state of the faculties, morning dreams are the more rational—whence the old adage, that such dreams are true.

Children dream almost from their birth; and if we may judge from what, on many occasions, they may endure during sleep, we must suppose that the visions which haunt their young minds are often of a very frightful kind. Children, from many causes, are more apt to have dreams of terror than adults. In the first place, they are peculiarly subject to various diseases, such as teething, convulsions, and bowel complaints, those fertile sources of mental terror in sleep; and, in the second place, their minds are exceedingly susceptible of dread, in all its forms, and prone to be acted on by it, whatever shape it assumes. Many of the dreams experienced at this early period, leave an indelible impression on the mind. They are remembered in after-years with feelings of pain; and, blending with the more delightful reminiscences of childhood, demonstrate that this era, which we are apt to consider one varied scene of sunshine and happiness, had, as well as future life, its shadows of melancholy, and was not untinged with hues of sorrow and care. The sleep of infancy, therefore, is far from being that ideal state of felicity which is commonly supposed. It is haunted with its own terrors, even more than that of adults; and, if many of the visions which people it are equally delightful, there can be little doubt that it is also tortured by dreams of a more painful character than often fall to the share of after-life.

In health, when the mind is at ease, we seldom dream; and when we do so our visions are generally of a pleasing character. In disease, especially of the brain, liver, and stomach, dreams are both common and of a very distressing kind.

WILLIAMS' N. Y. ANNUAL REGISTER for 1834; N. York, Jas. Van Norden.—This is the fifth year of this valuable, elaborate, comprehensive and accurate publication; and now only, as we learn, does it begin to afford to its enterprising and persevering Editor some compensation. Heretofore he has lost, not only time and labor, but money, by each publication. Its character is now, however, so justly established, that he may, we think, calculate upon at last reaping a harvest from his toils. The contents are of so miscellaneous a character, that it is impossible to enumerate any considerable portion of them. It must, therefore, suffice to say that every thing relating to the civil, literary, political, commercial and statistical affairs of this great State, together with much similar information with regard to the United States, is to be found in its pages, which, by the way, are more numerous by nearly one hundred in this Register than in any preceding one. The Register is for sale by the Editor alone at 41 Courtlandt street.

THE MECHANICS' MAGAZINE, AND REGISTER OF INVENTIONS AND IMPROVEMENTS, Nos. 1, 2, 3 and 4, of Vol. III; N. York, D. K. MINOR & J. E. CHALLIS.—We take blame to ourselves for not having before called attention to the progress made in its second year by this excellent and useful periodical. It seems however, to be so well established now in public favor as to be able to win its way alone, and without the notice of the contemporary press. It is, nevertheless, but just to say, that these numbers exhibit good judgment in the selection of topics, and as far as we are competent to judge, skill in the mode of treating them. The work is now stereotyped, so that back numbers can always be had; and no one who has any should be without all. It is also published in weekly sheets of 16 pp. each, like the London work of the same name, in order that those who desire it oftener than monthly may be accommodated. According to the wish of the parties, too, it may be had either in monthly parts, or in a bound volume once every six months.

The Editorial department is conducted by John Knight, who was long connected in that capacity with the London Mechanics' Magazine.

TRAVELS AND RESEARCHES IN CAFFRARIA, &c. &c. By STEPHEN KAY. 1 vol. N. Y.—HARPER & BROTHERS.—The writer of this volume, abounding in in-

teresting details of a region and peoples little known, is a Missionary, who passed six or seven years among them, in the discharge of his self-sacrificing labors. It is designed, and we think well calculated, to arouse attention to the condition of Africa, so deeply wronged by her intercourse with the other quarters of the world.

As a mere book of adventures, privations, and unaccustomed expedients—Independently of any higher motive—this work will repay the attention bestowed on it.

THE KNICKERBOCKER, for May; N. York, J. Dis. TURNELL.

THE MONTHLY MAGAZINE, for May; New York, MONSON BANCROFT.

The first named of these periodicals has changed proprietors and editor, and has improved by the change both in the matter and the manner of its articles. A vain glorious tone of superiority, unsustained by real merit of any sort, has given place to the quiet and gentle address of men who respect the judgment of their readers, and aim not, by proclaiming their own excellence, to forestall opinion. The biography of Talleyrand in this number is capital, though unsparing. The chapter on Cats is very good too.

The new Editors are *Lewis Gaylord Clark* and *Clement M. Edson*.

This number of the *Monthly* is excellent. Varied, sprightly, gay and wise by turns, it must work its way to favor and fortune—though as yet, both have been rather hoped for than realized. We commend this periodical to our friends.

HOOKE'S PLAN OF NEW-YORK.—We spoke some weeks ago of a Plan of this City by Burr, for sale by *Disturnell*, which was very neatly and portably put up. We have now another, by Hooker, not quite so neat as that by Burr, but comprehending more explanatory matter, as to public buildings, and designating the fire limits. These are very useful companions.

THE TOURIST; or Pocket Manual for Travellers—3d edition: N. Y., HARPER AND BROTHERS.—This speaks for itself; a little volume it is, but of indispensable necessity to travellers who perambulate our great State and the Canadas. It tells them all that is needful to comfort, speed and economy in their movements; and throws into the bargain a very considerable sprinkling of amusing historical lore.

LANDSCAPE ILLUSTRATIONS OF THE BIBLE, by W. & E. FINDEN. London: JOHN MURRAY. Part I.—The success which has attended this tasteful manner of illustrating profane story, has encouraged the publisher to essay it in regard to the Bible. The drawings are made by *Turner, Calcot, Stanfield*, and other eminent artists, from Sketches taken on the spot—the engravings by the *Findens*—and the descriptive parts are from the pen of the *Rev. Hartwell Horne*, of Cambridge. Each number is to contain four plates, and the work is to be completed in 24 monthly numbers. The price is half a crown, or about 56 cents per number. This first number gives views—of *Mount Ararat, of the brook Kedron, of the Dead Sea and mouth of the Jordan, and of Tadmor in the Desert*. It is a beautiful specimen; and if, as it may be anticipated, it is followed up in the same style, the work cannot but be popular.

PAUL AND VIRGINIA—translated from St. Pierre. 1 vol. Boston: LILLY, WAIT & Co.—A republication, in a small and neatly printed volume, embellished for the attraction of children and young persons, of one of the prettiest stories ever written for their entertainment.

HISTORY OF BOSTON, by ROBIN CARVER. Boston: LILLY, WAIT, COLMAN & HOLDEN.—We are glad thus to see our own histories popularized. With the records of Boston are connected some of the noblest acts of our struggle to become a nation; and we re-

joice to see them so told, as without losing any thing of their authenticity to become familiar and eagerly sought schoolboy tales.

SKETCHES—by Mrs. SIGOURNEY. Philadelphia: KEY & BIDDLE.—The pen of Mrs. Sigourney, which heretofore has chiefly been employed in poetry—pure, spiritual and most happily inspired—now adventures into a field where competitors are more frequent, but where success is not less gratifying.

We are compelled by want of room, to postpone to-day our further remarks, suggested by these "sketches" from her pen; but could not let another week pass without, at least, this brief notice.

We have several works yet on hand—some of them long in arrear: among them, the attractive volume prepared for publication by *S. De Witt Bloodgood*, of Albany, from the M.S. of the Ettrick Shepherd. We have, too, Vol. I. of the life of *ALEXANDER HAMILTON*, by his son, *I. C. Hamilton*, to which we hope to do justice in next Saturday's Review.

SUMMARY.

Mr. Wise, Mr. John Quincy Adams, Mr. Thomas, of Louisiana, Mr. Pinckney, and Mr. Murphey, have been appointed a Select Committee in the House of Representatives, to take into consideration the expediency of carrying into operation the Resolution of the Revolutionary Congress, concerning the erection of a monument at Yorktown, Va.

APPOINTMENTS BY THE PRESIDENT.

By and with the advice and consent of the Senate.
Uriel Sebee, to be Receiver of Public Monies at Fayette, Missouri, 17th December, 1833, when his commission expired.

Thomas Gillespie, to be Register of the Land Office at Bucyrus, in the State of Ohio, from the 26th day of May, 1834.

Finis Ewing, to be Register of the Land Office at Lexington, Missouri, from the 23d day of May, 1834.

William Wright, to be Register of the Land Office at Palmyra, Missouri, from the 29th day of May, 1834.

Hilary B. Cenas, to be Register of the Land Office at New Orleans, Louisiana, from the 17th of December, 1833.

Valentine King, to be Register of the Land Office at Opelousas, Louisiana, from the 28th of January, 1834.

John Killian, to be Register of the Land Office at St. Helena, Louisiana, vice G. Davidson, resigned.

Shelden S. Clark, to be an Appraiser of Customs for the port of New Orleans, in the place of R. F. Canfield, removed.

John P. Morton, to be Collector and Inspector of Edgartown, Massachusetts.

Pierre A. Barker, to be Collector and Inspector of the Revenue for the port of Buffalo Creek, New York.

Gabriel Holmes, Surveyor and Inspector of Wilmington, in the State of North Carolina, April, 1834, in the room of Richard Bradley deceased.

James Wade, to be Surveyor and Inspector of the Revenue, Swansborough North Carolina.

John D. Jones to be Naval Officer, Wilmington North Carolina.

James McGuire, to be Surveyor and Inspector, in the District of Columbia.

Robert Mitchell, to be Collector of the Customs, Pensacola, Florida.

Woodson Wren, to be Surveyor and Inspector, Natchez, Mississippi, in the place of Andrew Marchalk, rejected by the Senate.

Charles Barnett, to be Consul for Genoa, in the place of Robert Cambell, removed.

Ceran St. Vrain, to be Consul for Santa Fe, in Mexico, in the place of James Davis, removed.

George Adams, to be Attorney for the District of Mississippi, re-appointed.

All reappointments except those otherwise specified.

Coffee House Slip.—The bulk head recently put down on a line with South street, started a day or two since, left its bed, and slid into the river. A new one will have to be placed on the foundation of the old, before the slip can be filled in. Old slip is filled up, and in a short time will be regulated and paved.—[Daily Adv.]

WOODAUX, (N. J.)—A copper mine, the ore of which yields from 60 to 70 per cent. has been open-

ed near Flemington, in this State. In addition to the mine, which is said to be inexhaustible, a vein of four or five feet in thickness, and as many in breadth, has been discovered in its immediate vicinity.—[Village Herald.]

SHIP BUILDING.—We find in the Journal of Commerce of this morning the following paragraph:

In addition to the three ships now building in this city, as mentioned by us a day or two since, we learn that a fourth has been contracted for, to be built by Brown & Bell.

Among the list of passengers by the Paragon, for Vera Cruz, we notice Mr. Aaron Leggett, Merchant, of this city, who we learn is bearer of despatches from our Government to Col. Butler, Chargé d'Affaires at the city of Mexico.

[From the Baltimore American.]

The new Convention with Chili, recently ratified by the United States Senate, has been officially promulgated. It consists of thirty-one original, and four explanatory articles.

The commerce and navigation of the two countries with each other, are put on the footing of those of the most favored nations, and every subsequent grant, by either, to other nations, is to become as common to the other, as though specially granted,—freely, if given freely, or on the same terms, if compensation is required. The Republic of Chili reserves out of this stipulation its existing treaties with other South American Governments and with Mexico, and both parties except their own coasting trade.

The 5th, 6th, 7th, and 8th articles provide for the security of the property of the citizens of either country in the other, against embargoes, or imprisonment for military purposes, without indemnification, for protection and aid in their harbors, against pirates or other enemies, or in distress, for the restoration of property carried by pirates into the ports of either, and for exempting the cargoes of wrecked and damaged vessels of either party, not intended for consumption in the country, from all duties and imposts.

The right of disposing of personal estate is secured to the citizens of either party in the territory of the other, according to the laws which regulate the property of its own citizens, and successions, by testament or from intestates, follow the same rules.—In the case of real estate, three years is given to alien heirs to dispose of it, and withdraw the proceeds. Security of property, free access to the courts, and liberty of religious worship are mutually guarantees to the resident citizens of either.

From article 12 to 24 inclusive, relate to the questions of neutral commerce, contraband, and bloc ade.

They establish succinctly that free ships make free goods; that commerce in time of war shall be free from neutrals, direct to the ports of the enemies of either, and from port to port; and that on board of the ships of neutrals, every thing is free, (contraband excepted;) although the whole or part of the lading belong to belligerents. The same principle of protection extends to persons, except officers or soldiers in actual service; it further limits the benefit of this protection to the property and persons of belligerents, who acknowledge the same principles.

An alternative stipulation is made, that when the neutral flag protects the property of the belligerent, the flag of the belligerent shall not protect neutral property, and *conversos*,—where the neutral flag does not, the enemy's shall.

Article 14, defines what shall be contraband.—Contraband does not subject the vessel or cargo to confiscation, except of the contraband articles, nor to detention, if those articles are given up on demand. Sufficient notice of blockades is to be given, and vessels entering or departing are to be warned, and liable to confiscation only on persisting in spite of warning and notice.

Captains of armed vessels are made personally liable for all extortion or ill treatment in searching for contraband, and no commander of a merchant vessel is to be summoned on board of an armed vessel.—When vessels are under convoy, the word of honor of the commander of the convoy is to be taken as final evidence of the character and cargoes of the merchant vessels under his charge. Mutual stipulations are made, for the regulation of prize cases, that the reasons for condemnation in each case may be fully stated, and authentic evidence furnished to the party.

In case of war between the United States and Chili, a specific time is to be allowed to resident merchants to wind up their affairs, and safe conduct given them.

Persons of other occupations may remain, under the protection of the laws,—responsible for their personal conduct towards the State. No debts or property to be confiscated or sequestered.

A series of articles provides for the reception and treatment of Ministers, and their powers, and those of consuls.

Deserters from public and private vessels are to be given up to the consuls. An explanatory article except *slaves* as such, serving in any capacity in our vessels.

The other explanatory articles are not important, only making more explicit some of the provisions of the original articles.

The treaty is to continued for twelve years, and to be terminated then and thereafter only on a previous notice of twelve months.

FROM LIMA.—By the ship Leonidas, Capt. Woodbury, we learn that the time of his sailing, there was a revolution in Lima, and that Obregoso had been elected by a large majority. His opponent, Gen. Gamarra, late President, had possession of the capital with 800 troops. Obregoso was in the fortress of Callao with about the same number, and it was expected he would get the mastery, as the people were in his favor. Every prospect of a speedy peace prevailed.—[Gazette.]

CAPT. BACK.—A letter has been received this morning by Mr. Buchanan, his British Majesty's Consul, from Capt. Back, dated Fort Reliance, east end of Great Slave Lake, 7th December, 1833.

The following is an extract:—After detailing various matters of a private nature—

“And now, my dear sir, I must inform you that the expedition has advanced steadily in its humane and interesting object, without having experienced any of those untoward circumstances that sometimes paralyze and cast a gloom over our best and most strenuous exertions. Every thing is in a fair train; and next year, under the guidance of Divine Providence, I trust, we may be still in time to rescue suffering mortality from destruction.”

[From the Boston Courier.]

MADAWASKA.—The people living in the disputed territory, are, it appears in rather a singular position, belonging to no nation and yet claimed by two. Under such circumstances they had better “take the responsibility” of setting up for themselves, or remove themselves and their deposits to some other place. The following is from the Kennebec Journal.

Madawaska.—We learn that the inhabitants of Madawaska have been taxed by the British government, and the tax has been collected with much rigor; that the British hold undisturbed possession and have built a court house; that the inhabitants are suffering much from want, their crops having been scanty the last season. As the town had been incorporated by the Legislature of Maine, and the inhabitants assured of the protection of the United States, they prepared a memorial to our government asking assistance and protection, which was signed by a number, but subsequently seized and destroyed by the British authorities. They have, however, sent on a delegate to see Gov. Dunlap, and ask the assistance of the State. This delegate we learn has been to Brunswick, where the Governor now is, and obtained an order on the treasurer for a small sum of money. The authority of the Governor to do this may be questioned, but we are not inclined to urge that point in this case. We have not seen the delegate, but gather the foregoing statement from those who conversed with him. We were told many years ago that if Gen. Jackson could be elected President we should soon have our territory secured; but instead of this we first find him requesting the Governor of New Brunswick to pardon and release from prison, upon condition of *not repeating the offence against his British majesty*, certain persons of Madawaska who had been guilty of the heinous crime of proceeding to incorporate the town in pursuance of a special law of the State of Maine. Next we find him trying to get the Dutchman's award accepted; and this being stopped by the Senate, we have another decree requiring the Legislature of Maine to bargain away the territory for “an ample indemnity” in land or money, in secret session; and now we find the British government taxing the inhabitants and using as full authority as over any part of New Brunswick; while our government, State and National, looks on with apparent unconcern.

Has there been, asks the National Intelligencer of yesterday, an Earthquake in any part of the wide tract of territory which lies between us and New

Orleans? Or what else has interrupted the intercourse between this city and that? For four or five successive mails, no newspaper has reached this city from New Orleans.

[From the United States Gazette.]

THE LOCUSTS ARE COMING.—A very respectable inhabitant, who has resided in Germantown during a life of 74 years, mentions the curious fact that locusts not only appear every seventeen years, but that they make their appearance in great numbers always on the 25th of May. Our informant recollects their advent on the 25th of May, 1766, then six years old. He has since recorded their coming on the

25th of May, 1783,

25th of May, 1800,

25th of May, 1817.

Their holes may now be seen in ploughing, or under boards lying on the ground, preparing to come forth on Sunday week, 25th inst.

It is remarked that occasionally a few locusts are seen creeping out of their hiding places *before* the 25th, but they return again to join the great crowd.

Some two months since, a highly respected friend, who has resided all of his long and useful life in the vicinity, left for us a notice of the approach of the locusts, and an account of their time and customs. The piece did not reach our hand until it had appeared elsewhere. It was instructive with reference to this subject, and contained a remark that the locust seasons had usually been characterized as those of plentiful harvests of grain, &c.

DISTRESSING ACCIDENT AND LOSS OF LIFE.—The Erie, (Pa.) Gazette of last Thursday, gives the following melancholy statement.

Yesterday, about 10 o'clock, a sail boat, with nine passengers on board, put off from the wharf to cross the Bay to the public pier. The wind was blowing very heavy. When about half way across, she capsized and seven out of the nine were lost. Thomas Miles, son of Capt. Miles, of the steam boat New York, and a Mr. Woodbury or Woodford, from French Creek in this county, clung to the boat, and were taken off by a boat that put off to their relief.—Thomas McConkey, deputy Collector of this port, and a Mrs. Thomas, wife of the second mate of the steam boat William Penn, both of this town, were among the number lost. The other five were strangers, who were going to take passage on board the New York, which was then coming into the harbor. We have taken every possible means to ascertain the names and residence of the strangers. From the Register of names in the public Hotels and on the way-bills, and other sources, we gather the following result, which still may not be accurate, to wit: *Amos H. Bishop*, Butternuts, Otsego county, N. Y., *Luther Douglass*, Sherman, Michigan Territory, and a man by the name of *Palmer*, who took passage on board the stage at North East in this county, on the 13th inst. A young man, name not known, said to belong at North East in this county, and a gentleman from the town of *Palmer*, Michigan Territory, name not known, understood from his conversation, to have been a merchant at that place. One of the bodies has been found, but nothing about him, by which his name can be discovered.

The suspension of the New Orleans mails for several days past, until yesterday, is thus explained by the Post Master at Columbus, Geo.

“Four Western Mails are now due at this office. Three successive failures are owing to the destruction of a causeway by the recent heavy rain, over the swamp in the Creek Nation, about 50 miles from this.”—[Jour. of Com.]

The Mormons in motion.—According to a late number of the Painesville Telegraph, General Joe Smith, the leader of the Mormons, has, accompanied by about five hundred of his followers, set out for the purpose of reconquering the “Holy Land,” lately taken from them by the infidels of Missouri.—Joe, it seems, has been stirring up his proselytes for some time, stating that it was the command of God that they should buckle on the armour of their faith, and enrol under the banners of Mormonism; that their church was in danger; and that they must, if necessary, die the death of martyrdom. Accordingly, the deluded fanatics obeyed his summons; a great rise took place in the market for warlike implements, as each had provided himself with an abundant supply of pistols, dirks, swords, &c. The sword of Smith himself, it is said, is more than four feet long. The prophet, professes the expectation of sharing the fate of a martyr at the coming contest. We trust that the good people of Missouri will take care of these fanatics, and see that they do not violate the laws with impunity.—[Phil. Inquirer.]

NEW PERIODICAL.—An association of young men is just formed, as we learn, who mean to publish a monthly magazine, to be issued on the 15th of each month, under the title of the *American Spectator and National Magazine*.

We wish them all success, although we fear the multiplication of such periodicals does not augur permanent success to any of them.

An act relative to the Superior Court of the city of New York. Passed April 24, 1834.

The people of the State of New York, represented in Senate and Assembly, do enact as follows:

§ 1. All writs or process which shall issue out of the said court, may be tested in any day of the term in which such court shall sit, and be made returnable on any other day of the same term, or at the next term.

§ 2. The said court may establish by its rules the time to be allowed for entering and perfecting bail in suits pending therein, and to be given to the sheriff in such cases before an attachment can issue against him; also the time to be allowed for pleading in such suits, and for noticing the issues in fact joined in the same for trial; but in none of the above cases shall such time be less than eight days.

The Mobile Bank has declared an extra dividend of ten per cent. It has always declared semi annual dividends of four and a half per cent. or nine per cent. per annum. The Bank has just obtained an extension of its charter. [Jour. of Com.]

The steam packet William Gibbons, Capt. Pennoyer, arrived last night from Charleston, which place she left on the evening of the 17th, bringing papers to that date. We extract the following:

The Nashville Banner says—"The frost destroyed all the cotton which was situated on high grounds in this vicinity."

HUNTSVILLE, (ALA.) MAY 1.—Great Damage by Frost.—The damage sustained by the frost on Sunday night, has, perhaps, never been greater in this section of the country, so late in the season. For some weeks past the weather had been mild, just such as the planter could desire, and the stand of cotton was exceedingly fine; but the flattering prospects has been sadly reversed. Saturday night was attended with some frost—the weather was cold throughout Sunday, the wind from the north, and a killing frost was the consequence at night. We fear the injury has been general throughout North Alabama, if not the whole cotton growing country. In our immediate vicinity, we hear of some planters who have lost whole fields, others, one half, &c. Many will be unable to replant for the want of seed, which it will be impossible to procure at this late season.

Cholera.—A gentleman in this city, (says the Louisiana Advertiser) whose family were passengers on board the steamboat Warren, which left this city on the 15th inst. for Cincinnati, received accounts on Monday, dated Randolph, stating that the cholera had broke out on board of that boat, that his nephew, and three others were buried that day, and that about 15 or 20 in all had died.

There have been several cases of cholera in the city which have proved fatal, yet we do not think it epidemical, and that it may be avoided by prudence. The cases, so far, have been generally confined to the boats.

Forgery.—A gentleman of this city, (says the New Orleans Advertiser of the 5th inst.) of the highest respectability and large family connexions, and a director of a bank, has disappeared, and it is discovered that he has been for a long time past committing forgeries to a vast amount.

Casualty.—A laboring man in the employ of a grocer at the foot of Franklin street, drank a large quantity of cold water during the extreme heat of yesterday, and returned to his employment. In a short time after he complained of being unwell, and retired into a neighboring store, where he died.—The deceased was in perfect health, apparently about thirty years old. The warmth of the weather makes caution in the free use of cold water necessary. [Times.]

[From the Sackett Harbor Journal.]

We learn that the steamboat Oswego is ashore about five miles west of Oswego. It is said that for the want of a supply of wood, she failed to make sufficient steam to work her engines, and was driven ashore by the severe wind of Sunday night last. The latest report says that her situation is dangerous, and fears are entertained that she will be much injured, if not entirely wrecked. Her situation, we under-

stand, is such, that the engines, furniture, &c. may be saved, should the boat go to pieces.

[From the Evening Post.]

Among the Polish emigrants is an officer of the rank of Captain, who has left behind a wife and family. This gentleman is very anxious to return to Europe. One of the foreign ministers at Washington has liberally granted him a passport for that purpose. The sum of \$100 is necessary to effect the object. Those who are disposed to aid a gentleman, under circumstances that call for no comment, will confer a real favor by sending their contributions to this office, addressed to the care of J. Fenimore Cooper.

Great Haul of Fish.—On or about the middle of last month, at Greenway Landing, (fourteen miles below town,) occupied by Messrs. George H. Smoot and Charles Cooley, one million five hundred thousand Herring, and eleven to twelve hundred Shad, were caught at a single haul of the seine. Again, on the 28th inst., eleven thousand Shad were caught at a single haul of the seine, at the same landing. [Alex. Gaz.]

Great Haul of Great Fish.—On Friday some Fishermen at Carpenter's Point took at a single haul, upwards of eight hundred Rock Fish, of the largest size we ever saw. Some of them weighed upwards of 100lbs. They were selling this morning in market, at from 50 cents to one dollar for the largest, say one cent a pound for such fish as this. [Balt. Gaz.]

Great Fire at Needham.—On Monday night about eleven o'clock, a fire broke out in the paper mill of Messrs Lyon & Co. at Needham, in the village of the Lowell falls, which entirely consumed that establishment, together with the Machine Shop of Ware & Clark, and the small Wrapping Paper Mill of Hurd & Crehore. All the valuable Mills on the Newton side escaped. Messrs Lyon & Co. are insured \$4000 at the Manufacturers office—Hurd & Crehore, \$2000 at the National—Ware & Clark, \$1000 at Roxbury. Total loss, about \$20,000. [Boston Courier.]

LATER FROM ENGLAND.—The packet ship *South America* brings Liverpool dates of the 16th, and London to the 15th ult.

From France we have direct, later intelligence than this arrival furnishes. Of English news, so called, there is nothing, and our extracts therefore relate solely to Portugal, where the *Pedroites* were prospering.

LONDON, Monday Evening April 14.—The private letters received this morning from Oporto, dated the 30th ult. are very encouraging, and state that a considerable force marched out of that garrison on the 25th, towards Guimaraes, which town they entered and made themselves master of on the 26th, driving the Miguelites, about 2000 in number, in great confusion before them, and compelling them to retreat in the direction of Amarante. The Queen's troops then proceeded towards Braga, which they also took possession of, while Admiral Napier on the other side, conquered Viana, thus placing the whole province of Entre Douro e Minho under the command of the Pedroites, the greater part of which had declared in favor of the Queen. A reinforcement of 400 men had arrived at Oporto from Lisbon—and an additional number was shortly expected under the command of Vila Flor, who, immediately on his arrival was to make an attack on Coimbra, which if taken would then place nearly the entire coast of Portugal in the hands of Donna Maria.

Baron Soure, son of Viscount Pezo de Regua, alias Gaspar Texeira, a lieutenant general in the army of Don Miguel, entered Oporto on the 22d ult. to negotiate an amnesty for himself, father and friends. He was well received, his proposals acceded to, and a command on the Coimbra road given to him. This step on the part of the Miguelite officers was considered in Oporto of considerable consequence, particularly to the commercial world, as the Viscount was one of the greatest landed proprietors in Tras os Montes, and possessed the greater part of the vineyards in that province. He is also said to have considerable influence in that part of the country, which hitherto has been considered a strong Miguelite position.

LATE AND IMPORTANT FROM FRANCE.—By the *Turbo* from Havre, on Saturday, we received our Paris papers to the 8th, and yesterday by the *Poland*, Packet Ship to the 15th ult:

France has again been disturbed in her two chief

cities, *Lyons* and *Paris*, by insurrectionary movements—which, however, were put down so decisively, as should demonstrate the hopelessness of such desultory attempts. The details will be found in the extracts. The duration of anarchy, both in Lyons and Paris, was manifestly occasioned by a considerable desire to spare as much as possible the effusion of blood, and especially not to hazard the troops of the line or the National Guard, unnecessarily in narrow streets, of which the houses were filled with adversaries, who might fire upon them, without being themselves accessible. There was, it is clear, force enough to have crushed the insurrection in a moment, if imperious necessity had so required. We look upon the cautious and humane manner in which the insurgents were approached and reduced, as indicative, in a high degree, of the confidence entertained by the government in its own strength.

The disturbances at Brussels do not, we suppose, indicate any general discontent; though they go to prove restlessness and impatience on the part of masses, which must sooner or later lead to a wide spread explosion.

In the *Journal des Debats*, of 4th April, we observe a letter from an American gentleman in Paris, *G. M. Gibbs*, refuting conclusively the allegation made, and apparently relied on the House of Deputies, while discussing the American indemnity, that the Florida treaty between the United States and Spain contained a provision for cases of seizure and condemnation in Spanish ports by French authorities, which same cases to the amount of eight million francs, it was argued in the Chamber, were now again brought forward as claims against France. Mr. Gibbs shows, what indeed *M. de Broglie* did in the House when the objection was first made that it was wholly groundless.

M. Carrel, Editor of the *National*—which paper was sentenced to be suspended for a time from publication—having established a new one under the title of the *National of 1834*, was prosecuted and condemned before the Assize Court, for an evasion of the first sentence. On appeal to the Superior Court, this judgment of the Assize Court was set aside, on the ground that the *National of 1834* was a new paper, and not the paper under interdict of the law.

This may be thought to look like quibbling; but it is right that all penal statutes should be confined within the strictest letter.

In the streets where the barricades were formed, the lamps were all broken by the rioters. The inhabitants of the neighboring houses, in order to supply the deficiency, illuminated their windows.

Two young men arrested for the disturbances in Paris, and passing under guard along one of the bridges, sprang from the parapet into the river. The guard immediately fired upon them and killed one instantly, his body being seen floating in the Seine. The fate of the other, in the confusion, was not ascertained.

It may be the habit of revolutions, or it may be the extent of the city of Paris, but it is certainly curious to find it stated, as we do in one of the papers, "that during the bloody disturbances in and about the Rue St. Martin, the theatres of the boulevards distant from the scene, were thronged as usual, and the shops and coffee houses were all open."

M. Baillot, son of a Deputy, and a Captain in the National Guard, who was wounded while on duty, had died.

M. St. Marc Girardin, one of the Editors of the *Journal des Debats*, and a civil magistrate moreover, had a mischievous trick played on him during the riots, which caused him some very rough treatment. Some persons had, unperceived by him, placed some cartridges in his pocket, which, having been discovered by a patrol of the National Guard, they considerably maltreated this innocent and pacific person.

The latest intelligence from Lyons is annexed. It shows that all was again quiet

Telegraphic Despatch from Lyons, 12th April, 11 o'clock at night.

"TO THE MINISTER OF THE INTERIOR:

Lyons is delivered. The faubourgs occupied by the insurgents have fallen into our power. The intercourse is every where re-established. The mails have this evening again taken usual routes. The anarchists are in the greatest disorder."

The vessel of war despatched from Brest for this country with despatches, will bring, we apprehend, assurances that the French Government will make a second effort, in the next Chamber, to obtain a grant of twenty-five millions, due by treaty to America.

The accounts from London are of the 13th, without any news.

The dates from Madrid are of 6th. That capital was tranquil. General *Martinez de San Martin* was just appointed Captain General at Madrid, in place of *M. Freyre*, who became Inspector of Cavalry.

From a passenger we learn that General *Lafayette* was so much debilitated by reason of his indisposition, that fears were entertained for his life.

HAVRE, APRIL 16, 1834.

I send you herewith the Havre paper of yesterday, which contains some particulars of the attempt at revolution in Paris, which has become so fashionable.

Let not the world accuse Louis Philippe, if this monarchy of the people should finish by a military monarchy. You see nothing will do but force. At Lyons, it appears between 5 and 600 workmen and about 200 of the troops were killed or wounded, during the four days which the affair continued. The number of killed and wounded at Paris is reported to be about 100. The Dukes of Orleans and Nemours were fired on at the head of the cavalry, but not hurt. In our country, we talk of bush-fighting—here it is house-fighting. The insurgents concealed themselves in houses, and fired on the National Guard and troops of the line from the window. Some of the former were *poignarded* on their way to their posts. The barricades were but feebly defended.

Well, you see the Chamber, in spite of the Government, has rejected the bill presented for the first instalment of indemnity due to our citizens, on the ground that Mr. Rives obtained too much—no small compliment, *en passant*, to the negotiator. But what is to be done upon the occasion, is the question with every one. The opposition prints reason as if the Treaty was at an end, and that a fresh negotiation must be entered upon. The Government here, and the King the first, will act with good faith; and it appears to be the opinion of the best informed, that the affair will be brought with better success before the next Chamber.

I refer to the papers for what has happened lately at Brussels.

Events at Paris.

April 12.—Several members of the *Société des Droits de l'Homme* were arrested yesterday.

Government have taken strong precautionary measures for securing the tranquillity of the capital. The troops are consigned to their barracks, with a battalion of each regiment for pickets. Cartridges have been delivered out, and during the last night numerous patrols have paraded the streets. It is satisfactory to be able to announce that perfect tranquillity prevailed. A few groups, assembled in the populous quarters of the city yesterday, at the hour when the workmen usually go to dinner, dispersed on the remonstrances of the police.

April 13.—The band of rioters who last night attempted to renew the scenes of the Cloître St. Mary, in this capital, have been, as we fully anticipated in our account given in a preceding column, which was written between one and two o'clock this morning, defeated at every point by the bravery and devotion of the troops and the National Guards, who vied with each other in zeal and energy to put an end to these lawless and desperate outrages. The insurgents had placed themselves at the windows in the se-

veral streets in which they had taken their stand, whence they could fire in comparative safety upon the troops and National Guards, and thus assassinate their brave antagonists. They kept up in this manner an occasional firing during the entire night, which was not returned by the troops; but when daylight enabled the latter to act, to take possession of every barricade, and every house which afforded them shelter, was but the work of an hour, and, between seven and eight o'clock, they were masters of every hostile position. It is stated (but in the disorder necessarily prevailing at a moment like the present, we cannot vouch for the truth of every statement we receive), that in one of the houses, a number of the rioters were discovered, who had been most active in their murderous assailment of the National Guards and soldiery, and that not one of them were suffered to escape alive. The insurgents were evidently intimidated at the break of day by the display of force which surrounded them on all sides, and by the arrival of the artillery; they immediately abandoned their advanced barricades, and retreated to the houses of the narrow streets and alleys, which were then blockaded by the armed force on all sides, and several prisoners made. The National Guards of the Banlieu arrived in Paris during the night, and were stationed in the Place du Carrousel, and, with other detachments are now patrolling the disturbed quarters. At six in the morning the Dukes of Orleans and Nemours mounted their horses and rode to the scene of disturbance, taking the Quays, the Place de Greve, and the adjacent streets, to the Rue St. Martin. They were received in their progress with the warmest acclamations from the troops, the National Guards and the people. They returned to the Tuileries at eight o'clock.

The following additional particulars have reached us relative to the proceedings of last night:—In the 7th arrondissement the whole population, and especially the workmen, beheld with indignation the assassination of a drummer and a grenadier of the 7th legion who were walking alone. An officer of the staff on his way with orders for the 12th legion, received a bullet, which pierced his arm and entered his side. His life, however, is not despaired of. The National Guards and the Line received each other with cries of *Vive la Garde Nationale! Vive la Ligne!* At the Pointe St. Eustache the barricades were carried by a column of two battalions of the 4th Legion of the National Guards, one of the 10th, one of the 1st, and a battalion of the 54th of the Line.—M. Chapuis, Col. of the 4th Legion, a most gallant officer, was wounded in the arm by a bullet, and was replaced in the command by Gen. Alez. The lamps, as a matter of course, was broken by the insurgents in a part of the Rues St. Denis and St. Martin, as well as in several of the adjacent streets; but their absence was made up for by the inhabitants lighting up their houses. The Minister of the Interior remained almost constantly on horseback during the evening. He was with Gen. Bugeaud at the attack of a barricade; a young auditor of the Council of State, an officer of the National Guards who was on horseback by his side, received a bullet in the collar bone.

P. S.—(One o'clock.)—His Majesty is now reviewing the troops in the Place du Carrousel, preparatory to riding through the quarters of Paris which have become the seat of disorder, as he did in June, 1832. He was received by the troops and National Guards, as well as the assembled crowd, with enthusiastic cheers, and cries of *Vive le Roi! Vive Louis Philippe!* The quarters where the disturbances took place are still occupied by the Military and Municipal Guard, and the vigilance of the Government is unabated. Cavalry, infantry, and masses of the citizen troops remain under arms, ready to act at a moment's notice, should their service be again called for, of which, however, we are happy to announce, no apprehension is entertained. A great number of prisoners were made at the various barricades. As the Dukes of Orleans and Nemours were passing the Rue du Ponceau, two shots were fired at them, happily without effect.

The National announces that the patent of M. Mie, printer of the Tribune, has been withdrawn.—The number of this morning has not appeared.

The Lyons mail is still in arrears, so that we remain without any journal from that town of a date later than the 9th inst. Up to the moment of going to press, we could not learn that the Government had received any further details.

Events at Lyons and the Neighborhood.

The Ministerial Evening Journal gives the following details relative to the events at Lyons:—"The government received this morning by express a report of the proceedings at Lyons on Wednesday—

It presents a lamentable picture, since French blood has been shed, but at the same time affords positive assurances of the triumph of order and the law.—For several days the authorities had been warned, and were prepared for sinister occurrences. Every thing showed that the agitators, despairing of success in the capital, where the magistracy is sustained by the National Guards and the garrison, determined to make an attempt in the provinces, and the unfortunate city of Lyons, the capital of industry, obtained the deplorable preference. The *Mutuellistes* appeared little disposed to engage in the plot, and it has been clearly demonstrated that only such workmen as have become connected with political societies, joined the anarchists. As early as the preceding day, the brave General Aimard made his arrangements. The court was well guarded; reinforcements were called in from the environs. The Prefect went to the place St. Jean to judge of the state of affairs, and to consult with the military commanders. Although the court was sitting, the place St. Jean was completely free from any assemblage of the people, and this solitude evidently proved that the anarchists had determined to come *en masse*. In fact, they made their appearance about 11 o'clock. A man read an incendiary address, and in a few minutes after the barricades were begun. The Prefect, without a moment's hesitation, gave orders for their being destroyed.—[Galignani's Messenger, 12th April.]

Major General Buchet, who commands the department of the Bouches-du-Rhône, under General Aimard, directly brought the troops forward. The Gardarmie under Col. Ganuet, and the Infantry, assailed the barricades with the most determined resolution and carried them under a brisk fire. The Prefect never quitted the troops during the action. The barricades were all thrown down as soon as they were raised, but still there were a great many seriously wounded, and some killed, but the greatest loss was not on the side of the troops. The severest part of the action took place in the Palace de la Prefecture. The Anarchists found their most solid entrenchment in the new temporary hall, and it became necessary to beat down the palisades with cannon shot. They were soon destroyed, and those who had endeavored to defend them were put to flight. The place was then entered by the troops, and a long exchange of musketry ensued between the soldiery and the insurgents, who had stationed themselves in what is called the Organ gallery.—Cannon were again used, the Gallery was forced from the alley, and entered. A house, filled with rioters armed with muskets, was burst open by means of petards. A great number of prisoners were taken, some wounded, and others blackened with gunpowder. At every point the troops had the advantage. Other engagements took place on the bridges, at the Place des Terreaux, and at La Croix Rousse.

The cannon and musketry were firing for several hours together in the midst of this commercial city, where nothing would be heard but the sound of the looms, if factions had not attempted to put a stop to them. During a contest of five hours the troops displayed a firmness which must put an end to the criminal hopes of those who, it is said, relied on their defection. The military and civil authorities rivalled each other in zeal and devotedness. It is painful to have to bestow upon them this praise, but it is a duty to do honor to those who most expose their lives for the maintenance of order and the laws. At four o'clock the action ceased. Some few musket shots resounded afterwards at intervals in the streets in the centre of the town. The troops were in repose. The Government has not received any telegraphic despatch since that of yesterday morning, which announced that Gen. Aimard was in full possession of all the positions, but today no telegraphic communication could come beyond Semur. Despatches from all the surrounding country, as well as from St. Etienne, Macon, and Dijon, announce that all was quiet there."

[From the *Journal de Paris* of 12th April.]

On the reception of despatches, requesting the utmost speed in their transmission, at the Maritime Department, at Brest Capt. Bruix, of the brig *le Cuirassier*, was immediately ordered to be in attendance. The despatches from government were handed to him with instructions to make sail instantly for the United States, and to use the greatest exertions to make a quick passage.

A quarter of an hour afterwards the *Cuirassier* was under sail.

NEWS FROM BELGIUM.—Serious disorders have broken out at Brussels. The Belgian Journals of the afternoon of the 6th April give some details of the occurrences of the preceding day and that

morning, but the *Emancipator* of the 7th, which ought to arrive this morning, has not been received. In default of this journal, we give the following extract of a private letter from Brussels, dated 6th of April, six o'clock in the afternoon.

BRUSSELS, SUNDAY, 6th April, 6 o'clock.

You know that our Orangemen, at the time of the sale by auction of the stad of horses at Tervuren, had made a subscription for the purchase of the finest horses in it, for the purpose of presenting them to the Prince of Orange, to whom the stad belonged before September, 1830. The list of subscribers appeared two days ago in *le Lynx*, and amongst them were the names of many of the first inhabitants of Brussels, among others, the Prince de Ligne, M. de Trazegnier, the Duke d'Ursel, the Count de Bethune, &c.

This publication has produced an effect on the people which it is impossible to describe. All day on Saturday it was evident a disturbance was brewing. The manager of the theatre was called upon and requested to give on the following day *The Dumb Girl of Portici*, which piece is connected with the recollections of the revolution of 1830.

In the evening crowds collected—lists of Orangemen were handed about, at last, after the play, a numerous mob preceded to the office of the Journal *le Lynx*, from whence, as a measure of prudence, the publishers had removed the day before. After having broken some windows and destroyed the printing cases, the mob directed its steps to the *Rue de l'Esque*, where an Orange club was a short time since organized, but all the members, warned of the popular movement, had prudently disappeared.

The mob remained together all night. The next morning early they besieged the hotel of the Duke d'Uthel, where they broke all the windows and threw the furniture in the street. The hotels of the Prince de Ligne and Messieurs de Bethune, and Trazegnier were also sacked. The Orange club in the *Rue de l'Esque*, where on the day before, they had only broken the windows, was again visited and devastated. Numerous mobs paraded the streets with flags flying, and displaying lists of Orangemen whom they threatened to punish.

The troops sent by the Government against the rioters appeared to show little desire to disperse them. They confined themselves to preventing the devastation becoming a pillage. A certain number of arrests were made, but almost entirely of individuals who were carrying off the furniture which had been thrown into the street.

In the afternoon at 3 o'clock, the drum called the civic guard to arms, which, however, assembled but slowly.

It is the general opinion here that all these mobs are excited by those who appear to be the victims of them, and that the object is to bring about a conflict between the troops and the patriot part of the population, and thus give better chances of success to an attack which is preparing by the Prince of Orange, and which is shortly to take place.

What renders this conjecture probable, is the news received here, that two days since the Prince quitted the Hague for his head quarters.

King Leopold went out this morning in the streets of Brussels on horseback, accompanied by a numerous staff. He was very well received by the people, without his presence preventing the continuance of the disorders.

JOSEPH BONAPARTE published the following letter in the London Morning Herald.

To the subscribers of the petitions addressed to the Chamber of Deputies calling for the repeal of the law of banishment, enacted in 1815, against the family of Napoleon.

Gentlemen—Your voice was raised in favor of the family of Napoleon. We love to believe that it expressed a popular wish. Yet it was not favorably received by a majority of the Chamber in the Sitting of the 22d February. Notwithstanding, we are not less bound to offer you the tribute of our hearty gratitude as well as to the members of the minority, the real organs of the national sympathies.

On that occasion the President of the Ministerial Council, the Duke of Dalmatia, Marshal Soult, Major-General of the Emperor at Waterloo, and my old Chief of the Staff in Andalusia, &c. stood forth as our accusers, and not satisfied with proscripting us, was daring enough to assert that the brothers of Napoleon had not refrained in foreign countries, from the intrigues of factions. I alone, of all the brothers of Napoleon, resided in a free country, at the period of the revolution of 1830. I was alone in a condition to testify to France the son of Napoleon, with whose sentiments, although French, I was acquainted. I wrote to the Chamber of Deputies on the 18th of

September, 1830, from New York. The new King was proclaimed when my letter reached Paris; it was not read in the Chamber. I arrived in England after the Reform Bill, and on the same day saw in the public Journals the announcement of the premature death of my brother's orphan. At the same time I learned France was still closed against us. I have waited under the social securities (which are not deceitful illusions here) in expectation of the moment when the voice of the French People, restored to itself, would destroy this monument of national bondage exacted by foreigners in hatred of the French revolution, and of him who was its most formidable representative.

The France of July has erected his statue; his family are still proscribed; their only crime being the name which Napoleon bequeathed to them. I could not but hope for the repeal of an unjust law, which I hastened with all my might, not so much on account of my private interests, but rather in behalf of fifty members of our family, and, still more than all, for the sacred interest of the outraged national dignity.

Such are the intrigues of which I take a pleasure in rendering a full account to my fellow citizens. I appeal to the impartiality of their judgment, and they will persevere in manifesting it in a legal manner, by availing themselves of the sacred and inalienable right of petition. If the Paris police can discover any other intrigues, I urge them to disclose them to the President of the Council—I defy him to produce a single proof in support of his calumnious assertions—I do not wish to recriminate further.

With respect to the proposition for giving us permission to reside in France, according to the good pleasure of the ministers, we trust that no one will believe that a single member of our family would ever wish to return to it stripped of the security of the common law. It would be a strange spectacle, truly, were the family of Napoleon, to constitute, amongst a great people, a class of ministerial hostages! It could not have been, certainly, to degrade us, that you demanded our return; and the members of the Chamber of Deputies who repudiate the law that deprives us of our right as citizens, have been the interpreters of our sentiments and of yours. It is the country, with all the rights and all the responsibilities of a citizen, that we seek for, which you seek for us, and we hope to obtain from the nation's will.

In order to decry us in the eyes of the new generation, and to justify both the banishment and confiscations with which we have been visited, they have made us pretenders. We belong to the age in which we live—we are the creatures of France, in 1804—Frenchmen, subordinate to the French in 1834—we are aware that the generation of to-day is not bound by the will of its ancestors, that nations may perpetuate, alter, modify, restore, and destroy whatever has been established in former times, and under a different state of circumstances—we have ever known that families, as well as individuals, were bound to free nations by duties and not by rights. Had Napoleon been alive at this day, he would have concurred with us—he would have recognized the sovereignty of the French people, who alone have the right to give that government, which seems most to their interest, or according to their pleasure, nay, even according to their caprices. The Dictatorship too long maintained by Napoleon, caused him to be misunderstood by some persons. This Dictatorship was prolonged by the perverseness of the foes of the Revolution, who would have destroyed in his person, the principle of national sovereignty, of which he was but the emanation.

But at the general peace, universal suffrage, the liberty of the press, and all the guarantees of enduring prosperity of a great nation, which he contemplated, must have wholly unveiled him to France, and must have enabled all his contemporaries to form the same judgment of him, as posterity will entertain. His whole thoughts were known to me, and my duty is to proclaim them loudly. He sacrificed himself on two occasions to prevent a civil war in France. Those who inherit his name, would renounce for ever the felicity of breathing the air of that country, could they believe that their presence would be a source of the slightest disturbance to her peace. Never will they relinquish their appeal to the nation.

Such are the principles, opinions, and feelings of the whole of the members of the family of Napoleon; of whom I am the organ—all for the people and by the people.

With such sentiments, gentlemen, and fellow citizens, shall we vindicate, I trust, the patriotic anxiety which you have testified towards us.

JOSEPH NAPOLEON BONAPARTE.

LOCOMOTIVE ENGINES.

THE AMERICAN STEAM CARRIAGE COMPANY, OF PHILADELPHIA, respectfully inform the public, and especially Railroad and Transportation Companies, that they have become sole proprietors of certain improvements in the construction of Locomotive Engines, and other railway carriages, secured to Col. Stephen H. Long, of the United States Engineers, by letters patent from the United States, and that they are prepared to execute any orders for the construction of Locomotive Engines, Tenders, &c. with which they may be favored, and pledge themselves to a punctual compliance with any engagements they may make in reference to this line of business.

They have already in their possession the requisite apparatus for the construction of three classes of engines, viz. engines weighing four, five, and six tons.

The engines made by them will be warranted to travel at the following rates of speed, viz. a six ton engine at a speed of 15 miles per hour; a five ton engine at a speed of 18 miles per hour; a four ton engine at a speed of 25 1/2 miles per hour. Their performance in other respects will be warranted to equal that of the best English engines of the same class, with respect not only to their efficiency in the conveyance of burthen, but to their durability, and the cheapness and facility of their repairs.

The engines will be adapted to the use of anthracite coal, pine wood, coke, or any other fuel hitherto used in locomotive engines.

The terms shall be quite as favorable, and even more moderate, than those on which engines of the same class can be procured from abroad.

All orders for engines, &c. and other communications in reference to the subject, will be addressed to the subscriber, in the city of Philadelphia, and shall receive prompt attention.

By order of the Company,

WILLIAM NORRIS, Secretary.

December 2d, 1833.

For further information on this subject see No. 40, page 728 of this Journal.

RAILROAD TURNOUTS, REVOLVING PLATFORMS AND SIDELINGS.

The subscriber having been for some years engaged in constructing turnouts, and inserting the necessary switches and fixtures appertaining to the same, on the Baltimore and Ohio Railroad, and as those works on that road will be shortly completed, he is desirous of being employed by any Railroad Company requiring work of the above description.

He will either contract at a fixed price to execute the work, he providing all the necessary materials and fixtures, or otherwise, or he will engage himself at a stated salary.

In relation to his abilities and general character he begs to refer any Company, disposed to engage him, to the Baltimore and Ohio Railroad Company.

Letters can be addressed to him at the Office of Construction Baltimore and Ohio Railroad, Baltimore.

REUBEN ALER.

SURVEYORS' INSTRUMENTS.

Compasses of various sizes and of superior quality warranted.

Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by

E. & G. W. BLUNT, 164 Water street, J31 St corner of Maidenlane.

ENGINEERING AND SURVEYING INSTRUMENTS.

The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principle of construction and workmanship to any imported or manufactured in the United States; several of which are entirely new: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy—also, a Railroad Goniometer, with two Telescopes—and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.

WM. J. YOUNG,

Mathematical Instrument Maker, No. 9 Dock street, Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.

Baltimore, 1833.

In reply to thy inquiries respecting the instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad. I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable.

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sights, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to lateral angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,

JAMES F. STABLER, Superintendent of Construction of Baltimore and Ohio Railroad.

Philadelphia, February, 1833.

Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors.

E. M. GILL, Civil Engineer.

Germanstown, February, 1833.

For a year past I have used instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY R. CAMPBELL, Eng. Philad., Germantown, and Norris, Railroad

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LATER FROM EUROPE.

By the *Napoleon*, there are dates from London to the 24th ult.

Parliament reassembled on the 18th, and Mr. O'Connell made along speech on the 22d in favor of a repeal of the Irish Union. He was to be replied to by Mr. S. Rice.

The Ministry had entered with zeal upon some important measures, viz:—for the commutation of tithes—for the abolition of church rates, a tax particularly odious to dissenters, who were made to contribute for the repairs of churches in which they do not worship—for a system of national education, &c.

An immense meeting of the Trades Union, to the number, the Times estimates, of two hundred thousand, paraded London and Westminster with flags and banners on the 22d, in order to petition the King for the mitigation of the sentence of certain *Dorchester rioters*. Every preparation was made by the authorities to preserve the peace, and the meeting passed off quietly and without effecting its object—the King having been advised to refuse to receive a petition from a multitude, or a deputation thereof, while the multitude were at hand, and in motion, as if to overawe the Throne.

The disturbances in Brussels had given to King Leopold a pretext to revive an old law for the exclusion of foreigners from the kingdom; and many, accused of fomenting disturbances, had accordingly been sent off.

From Spain the accounts are encouraging, since the Queen Regent has decided on the convocation of the Cortes, *per estamentos*. We give the decree at length, as it may be looked upon in some sense as a constitutional Charter given to Spain. No time nor place had, however, as yet been named for the meeting. [It will be published in our next.]

Spain has agreed to acknowledge *Donna Maria* as Queen of Portugal. Rumors of changes in the Spanish ministry, by the expulsion of *Burgos*, *Zarco del Valle*, and their partizans, and the substitution of more liberal Ministers, had reached London, but were not confirmed; and the decree requesting the convocation of the Cortes, bears, it will be seen, the signatures of these functionaries.

The motives for calling the Cortes are set forth in a long report, for which we have not room.

In France order was restored, and at Lyons the operatives were returning to their work. The injury and loss, besides that of life, occasioned by the sanguinary tumults in that city, are spoken of as very great and distressing. The dates from Paris are of the 21st.

The telegraphic despatch, purporting to have been sent from Lyons at 11 o'clock at night of the 19th April, and published in the Paris papers of the 15th as official and authentic, proves to have been unfounded,—since the riots and battle continued, as will be seen by our extracts, some days afterwards. The latest intelligence however leaves no doubt now that the disturbances were at an end.

The Journal du Paris of the 18th says—"Government has today received despatches from Lyons, and from all parts of the kingdom where the anarchists had attempted disturbances. Order is re-established everywhere."

PORTUGAL.—There are dates from Lisbon to the 14th April, and they bring an account of the Miguelites having despatched from Santarem a large force, which made an attack upon St. Ubes on the 12th, but was repulsed with considerable loss. The attack served to elicit the zeal of the troops in Lisbon, many of whom, particularly the foreigners who were lately in disgrace, volunteered to go to St. Ubes, to assist in repelling it. Their services were not accepted.

An attempt was made by Lord Howard De Walden and Admiral Parker, on the 31st March, to induce Don Miguel to leave Portugal, upon the following

terms. He was to be allowed a safe conduct out of the country, and a liberal income, guaranteed by England; an amnesty was to be granted to all his followers; and his own right of succession to the throne recognized in default of issue of the Queen. These terms Miguel rejected.

TOWNSEND & DUFFEE, of Palmyra, *Manufacturers of Railroad Rope*, having removed their establishment to Hudson, under the name of *Duffee, May & Co.* offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J. B. Jervis, Eng. M. & H. R. R. Co., Albany; or James Archibald, Engineer Hudson and Delaware Canal and Railroad Company, Carbon Dale, Luzerne county, Pennsylvania. Hudson, Columbia county, New York, { January 29, 1833.

NOTICE TO MANUFACTURERS.
SIMON FAIRMAN, of the village of Lansingburgh, in the county of Rensselaer, and state of New-York, has invented and put in operation a Machine for making Wrought Nails with square points. This machine will make about sixty 60 nails, and about forty 10d nails in a minute, and in the same proportion larger sizes, even to spikes for ships. The nail is hammered and comes from the machine completely heated to redness, that its capacity for being clenched is good and sure. One horse power is sufficient to drive one machine, and may easily be applied where such power for driving machinery is in operation. Said Fairman will make, vend and warrant machines as above, to any persons who may apply for them as soon as they may be made, and on the most reasonable terms. He also desires to sell one half of his patent right for the use of said machines throughout the United States. Any person desiring further information, or to purchase, will please to call at the machine shop of Mr. John Humphrey, in the village of Lansingburgh.—August 15, 1833. A29if RM&F

TO IRON MANUFACTURERS AND OWNERS OF IRON ORE BEDS.

JOSEPH GOULDING, of Keeseville, Essex county, N. Y., has invented and patented a *Magnetic Separating Machine*, for separating Iron Ore from the extraneous matter usually found in connection with it; and he begs leave to recommend it to the especial notice of owners of Ore Beds as possessing qualities of great importance, as by the use of it many ore beds can be made very valuable, it being applicable in all cases when the Ore is magnetic.

The quality of the iron made is much improved by the process of separation, indeed good iron can, after separation, be made from ore which would without it be considered not worth working. There is also found to be a great saving in the transportation of ore, and in time and fuel required to work the same into iron.

Mechanics can be furnished at short notice which will separate from half a ton to twenty tons each in twenty-four hours. J. Goulding also manufactures to order, *Cylindrical Forge and Blast Furnace Bellows*, of the most improved construction, and which are successfully used in nearly all the Forges and Furnaces in Clinton and all the adjoining counties. January 20th, 1834. M 14/f

RAILWAY IRON.

Ninety-five tons of 1 inch by 1 inch, Flat Bars in lengths of 14 to 15 feet counter sunk holes, ends cut at an angle of 45 degrees with splicing plates, applicable to suit.

200	do.	1 1/2 do.	1 do.
40	do.	1 3/4 do.	1 do.
800	do.	2 do.	1 do.
800	do.	2 1/2 do.	1 do.

soon expected.

250 do. of Edge Rails of 36 lbs. per yard, with the requisite chairs, keys and pins.

Wrought Iron Rims of 30, 33, and 36 inches diameter for Wheels of Railway Cars, and of 60 inches diameter for Locomotive wheels.

Axles of 2 1/2, 3, 3 1/2, 3 3/4, and 4 inches diameter for Railway Cars and Locomotives of patent iron.

The above will be sold free of duty, to State Government, and Incorporated Governments, and the Drawback taken in part payment.

A. & G. RALSTON,
9 South Front street, Philadelphia.
Models and samples of all the different kinds of Rails, Chairs, Pins, Wedges, Spikes, and Splicing Plates, in use, both in this country and Great Britain, will be exhibited to those disposed to examine them. d71meowr

ALBANY SEED-STORE AND HORTICULTURAL REPOSITORY.

The subscriber having resumed the charge of the above establishment, is now enabled to furnish traders and others with **FRESH GARDEN SEEDS** upon very favorable terms, and of the growth of 1833, warranted of the best quality.

The greatest care and attention has been bestowed upon the growing and saving of Seeds, and none will be sold at this establishment excepting those raised expressly for it, and by experienced seedsmen; and those kinds imported which cannot be raised to perfection in this country; these are from the best houses in Europe, and may be relied upon as genuine.

It is earnestly requested whenever there are any failures hereafter, they should be represented to the subscriber; not that it is possible to obviate unfavorable seasons and circumstances but that satisfaction may be rendered and perfection approximated.

Also—French Lucern, White Dutch Clover, White Mulberry Seed, genuine Mangel Wurtzel, Yellow Locust, Ruta Baga, and Field Turnip Seeds, well worth the attention of Farmers.

W. THORBUEN,
347 N. Market st. (opposite Post Office.)

Catalogues may be had at the Store; if sent for by mail will be forwarded gratis. Orders solicited early, as the better justice can be done in the execution.

* * * Mr. Thorbuen is also Agent for the following publications, to wit:—

NEW YORK FARMER and American Gardener's Magazine. MECHANIC'S MAGAZINE and Register of Inventions & Improvements.

AMERICAN RAILROAD JOURNAL and Advocate of Internal Improvements; and the

NEW-YORK AMERICAN, Daily, Tri-Weekly, and Semi-Weekly, either or all of which may be seen and obtained by those who wish them by calling at 347 North Market street, Albany.

STEPHENSON,

Builder of a superior style of Passenger Cars for Railroads
No. 264 Elizabeth street, near Bleecker street,
New-York.

RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part of the New-York and Harlem Railroad, now in operation. J 25 if

RAILROAD CAR WHEELS, BOXES AND OTHER RAILROAD CASTINGS.

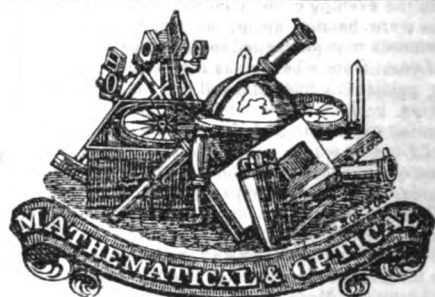
Also, AXLES furnished and fitted to wheels complete at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to. Also, CAR SPRINGS.

Also, Flange Tires turned complete.
J8 ROGERS, KETCHUM & GROSVENOR.

NOVELTY WORKS,

Near Dry Dock, New-York.

THOMAS B. STILLMAN, Manufacturer of Steam Engines, Boilers, Railroad and Mill Work, Lathes, Presses, and other Machinery. Also, Dr. Nott's Patent Tubular Boilers, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited. m18



INSTRUMENTS.

SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

EWING & HEARTT, at the sign of the Quadrant, No. 53 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Eng. neers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude.

For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewing & Heartt.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable.

They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES P. STABLER,
Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' Instruments of your Manufacture, particularly Spirit levels, and Surveyors' Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

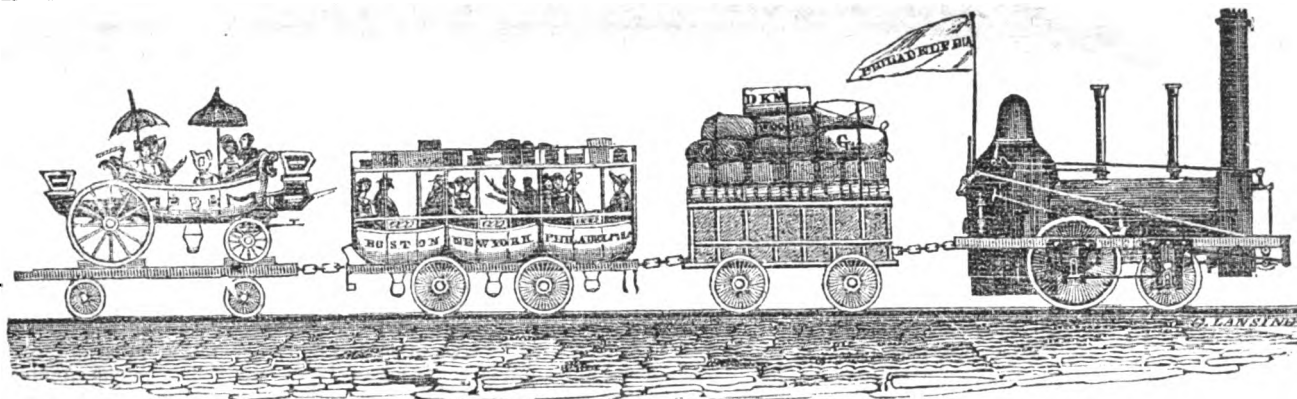
WILLIAM HOWARD, U. S. Civil Engineer.

Baltimore, May 1st, 1836
To Messrs Ewing and Heartt.—As you have asked me to give my opinion of the merits of those instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming acquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use.

The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprise so well merits, I remain, yours, &c.

B. H. LATROBE,
Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them, upon application, to any person desirous of perusing the same. m18



AMERICAN RAILROAD JOURNAL, AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT No. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, EDITOR.]

SATURDAY, MAY 31, 1834.

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, MAY 31, 1834.

RAILROAD MAP.—We have again to ask the indulgence of those who have subscribed for the Railroad Map. We were obliged, even after it was nearly ready, to have it *re-engraved*, which of course has very much retarded its appearance. It will, however, be far more complete than at first contemplated, as there will accompany it a concise description of the most important railroads and canals, compiled from the best sources within our reach, which will render it far more useful to those who desire to see at a glance the numerous works of the kind now constructed, constructing, and in contemplation.

It will be forwarded as soon as completed to those who have ordered it. It is desired that those who wish it, but have not ordered it, will let us know at an early period, that all those for a distance may be forwarded at the same time.

It comprises all that section of the U. States and Canada in which there are any works of internal improvement. And in order that the account to accompany the map may be as complete as possible, we desire that a short statement may be forwarded to us at the *earliest possible period*, by the engineer, president, or agent of each company now constructing, or preparing to construct, any work of the kind within the limits of our map. It will cause them very little labor, yet confer upon us a great favor; and we in our turn will endeavor to reciprocate their kindness.

We also ask for a statement of the present

condition of, and amount of business done on, those works which are now in use, excepting the South Carolina Road, the Chesapeake and Ohio Canal—statements relative to which we have already received.

BOSTON AND PROVIDENCE RAILROAD.—We have been favored with a copy of the charter granted by the Rhode Island Legislature, at their late Session, for the continuance of this Road from its termination at the Massachusetts' Line to tide water in Providence. The company, although for a time kept in suspense, have, as will be seen by the following extract from the charter, very little cause to complain. The charter is a very liberal one.

"And the said Corporation are hereby authorized and empowered to locate, construct and finally complete a Railroad in such manner and form as they shall deem most expedient, commencing at the dividing line between this State and the State of Massachusetts, and at that point which shall intersect and connect with the railroad now being constructed by the Boston and Providence Railroad Corporation, from the city of Boston in said State of Massachusetts, towards the State of Rhode Island; and from this dividing line as aforesaid passing into the State of Rhode Island to tide water in the city of Providence, in such place or places as may be deemed most convenient for said company, and with such lateral branches of said road to any part of the waters of Narragansett Bay, or to any villages or factories as the said company shall deem expedient, provided the same do not interfere with the privileges heretofore granted to any other railroad company."

Twelve miles of the road commencing at Boston are completed, and will be opened for use on Tuesday next, the 3d of June. For the purpose of witnessing this event the directors will assemble in Providence, and on Monday pass along the line towards Boston, with such gentlemen as desire to examine the route, and witness its state of forwardness; and on Tuesday they purpose an excursion in their passenger cars, with a locomotive engine, on that part of the road which is completed.

The Agent and Engineer will please accept our thanks for his polite invitation to be one of the party. It would afford us great pleasure, but other engagements will probably prevent.

The railroad between Buffalo and Black Rock, in the State of New-York, has been finished in part, and the cars have commenced running on the Buffalo end of the route. At the Black Rock end, a line of stages conveys passengers to the Falls.

INTERNAL IMPROVEMENTS IN CANADA.—We publish to-day an account of two contemplated works of improvement in Canada, which, when completed, will afford great facilities to the inhabitants of the upper provinces. The first is for a canal from Port Hope, on Lake Ontario, to Rice Lake, and probably to Lake Simcoe, from which there is a water communication with George's Bay and Lake Huron. The other, a railroad from Ancaster, at the extreme west end of Lake Ontario, to the town of London, on the river Thames, and probably to Lake Huron. These are works of great importance to Canada. It will be seen, by a glance at the map, that these works, if completed, taken in conjunction with the improvement of the St. Lawrence, now in contemplation for steamboat and sloop navigation, will divert much of the business now done upon the Erie Canal—and that they will be completed, we have little doubt.

What, then, ought New-York to do to retain her share of the business? She *ought*, and *must*, construct a sloop and steamboat canal from Oswego to the Hudson. That, and only that, will secure her just proportion of the business.

AUGUSTA AND ATHENS (GA.) RAILROAD.—The continuation of the South Carolina Railroad to Athens, (Ga.), or rather the construction of the Augusta and Athens Railroad, which, we hope, will soon be commenced, will constitute another very important link in the great line to the Mississippi River, for short of that point it certainly will not be terminated.

POSTS.—The Maine Farmer states that Mr. North, of Augusta, several years ago, set two posts near the river. One was butt-end up the other butt-end down. Both were equally sound when put into the ground, and now the one with butt-end up is sound and good, while the other is decayed.

CANAL FROM RICE LAKE TO LAKE ONTARIO.—The following is an outline containing the most essential features of a Report to His Excellency Sir John Colborne, on the practicability of connecting Rice Lake with Lake Ontario, by a Canal through Port Hope, by Mr. R. A. Maingy, Civil Engineer.

Mr. Maingy commenced his survey about the middle of December last. The object was to ascertain the cheapest and most direct route from Rice Lake to Ontario.

A very formidable difficulty presents itself within a few yards of Rice Lake, in a high ridge of land stretching in an East and West direction from near the mouth of the river Trent, quite through the country, into the State of Ohio, rising from a few yards to many hundred feet above the level of the waters in Rice Lake. It being necessary to procure a sufficient supply of water from the Lake to feed the Canal for the first three miles—this barrier appeared at first sight as an insurmountable obstacle to the undertaking; but, by persevering in his researches, discovered a natural passage or ravine through it, well calculated to assist in passing through this formidable ridge; although its adoption will occasion the route of Canal to be more circuitous than could be wished, from its being necessary to follow the ravines the whole distance to Port Hope—still it is the only chance there is of bringing the waters of Rice Lake down to Port Hope.

Mr. Maingy's attention was next directed to the choice of a place at which the Canal should commence at the Rice Lake, and Orton's Creek has been determined on, on account of an excellent harbor and many other advantages.

The proposed dimensions of the Canal are twenty-two feet broad at bottom, with a slope of one foot and a half horizontal to a foot perpendicular, and four feet depth of water, with locks seventy feet long, by fourteen feet broad, and in general ten feet lift. It is also proposed, in consequence of the very great distance from the intended line of Canal, at which proper building stone can be procured, that the locks should be built of wood, which, if properly constructed at first, will, with occasional repairs, last from fifteen to twenty years, and be equally as useful as those of stone, the interest on the difference of expense between them will more than repay the cost of maintaining them in repairs, and should it ever be contemplated to increase the dimensions of the Canal, those built of wood can be readily removed.

The route of Canal follows the natural passage before mentioned, in a southerly direction; after crossing the Cobourg Road, the land rises very rapidly until it arrives at the summit of the ridge, distant from the Lake one mile and a quarter, and 63 feet and 15th-hundred part of a foot above its level; on the north and south sides of which summit, (at a few yards asunder,) two springs take their rise, one sending its overplus water into Rice Lake, through Orton's Creek, the other running south from the head of Howe's Creek, and discharges itself into Lake Ontario. Both are, however, very insignificant; from this point the route continues in nearly a straight direction, until it crosses the Cavan Road, at the corner of Howe's Inn, and enters a ravine running in a due west direction to Moon's clearing, the termination of the first section, and three miles distant from the place of starting—the fall of the land from the summit is very rapid until at Moon's, where the route is once more level with the waters of the Lake. The expense of this section will be very great, in consequence of the great depth of cutting, no less than £63,495 14, as per annexed estimate. A guard gate at the head of the lake will be required to protect the Canal against spring and fall floods, that otherwise would have a tendency to obstruct the navigation, as also to shut out the supply of water in case of any accident occurring along the line of Canal. The next section continues in the same direction for a mile, and then turns to the south. The land being considerably below level, and being well adapted for damming, it is proposed, at the point

marked A, (see plan,) to build a dam of such dimensions, that it will not only resist the effects of frost, but also serve the purpose as a road. An embankment to confine the water from drowning too much land will be required on the north side of the ravine, unless the land which is of no value can be procured in gift, (which is not improbable, from the anxiety of the different holders of land along the route of Canal, to see it go into immediate operation,) in which case a saving of £2,005 0s. 6d. may be effected in this section,—to provide against floods, as also to carry off the overplus water, it will be requisite to construct a waste wier in the dam, and two along the embankment; the former will be very valuable for any hydraulic establishment, and would, in the course of a few years, more than pay the expense of erecting the dam, &c., as also keeping it in repair. In the next section, running in a southerly direction through Mr. Trotter's land, being much above the level, there will be some extra excavating, and, as per annexed estimate, the amount required to complete it will be £4,758 7s. 4d. The section commencing near Mr. Riddle's land, follows the same direction as the last, to its termination in the centre of Mr. Seaton's clearing—in this mile nine locks, of ten feet lift each, will be necessary. Smith's stream is frequently crossed in this and the two following sections, but no culverts will be required, as its course can readily be changed, until such time as the work be completed, when it is intended to admit it into the Canal,—the cost of this section, as per detailed estimate, will be £4,533 6s. The next mile, which is somewhat winding, commencing in the 9th lot of the 6th concession, follows the before mentioned creek in the 7th lot, then turns back with a gradual bend into the 10th lot, back again into the 8th lot of the 5th concession, and terminates at Messrs. Boen and Coy's mill pond. In this section 6 locks, of 10 feet lift each, will be necessary—cost of this mile £3,306 19s.

The 8th section, terminating at said mill dam, will cost but little, it being intended to make use of the pond, as being a canal already formed: by raising the present mill dam from 5 to 15 feet, it will drown the ravine as far back as Fye's clearing, the termination of the last section, and afford more than sufficient depth of water for the navigation, at the small cost of £370, and at the same time serve as a reservoir for supplying the locks, and by raising the water on a level with a small ravine, through which it is intended to leave the pond; much extra cutting will be saved in the next section which, commencing at this point, continues in a south-east direction through the lands of Messrs. Jamieson and Quay, and by six locks, (one of five feet, and five of ten feet lift,) descends into Bedford's Creek, which turns its direction to the south. The cost of completing this mile, (in which there is some extra cutting in passing from the mill to the creek,) as per annexed estimate, will be £5,284 3s. 6d. The 10th section continues still to following the course of the same creek, which is admirably adapted for damming, (its banks being very steep, and not more than eighty feet asunder,) were it not for the rapid fall of the land, which will require four locks of ten feet lift each, and cost, agreeably to the annexed estimate, £2,527 17s. From this last section, following the same creek to the termination of the 11th section, at John Brown, Esq.'s mill pond, two locks, of ten feet lift each, will be necessary, and the cost of completing it will be £1,754 3s. 6d. 12th and 13th sections, commencing at the mill pond, which it is intended, by the formation of a tow-path along its bank, and clearing it of its stumps, &c., to use, as part of the Canal, terminates in John D. Smith's property, near the stone quarry. One lock, of ten feet lift, will be required to descend into, and two locks, (one of five and one of ten feet lift,) to descend out of the pond. The expense of this section will be £2,012 15s. 6d. The 14th and last section runs on the east side of Smith's Creek, and passing in front of the post office, terminates at the boundary line

of the Wharf Company's Land. In this section there will unavoidably be some rock excavation, also some embanking, and five locks, one of five feet and four of ten feet lift.

The whole distance, from Orton's Creek, in Rice Lake, to the Wharf, at Port Hope, is 14 miles, within a fraction, and the difference of level between the two lakes is 361 feet, and 32 hundredth parts of a foot, as per annexed estimate, which has been carefully made. The amount required for completing the communication, will be £101,535 15s. 6d.

The ultimate success of any measure for facilitating the communication of the Rice Lake with Lake Ontario, depends wholly upon its connection with an accessible harbor. The reporter considers that he has sufficiently informed himself of the localities of the shores of Lake Ontario, to be able to say with confidence that Port Hope, from its position, is not only the natural, but the most accessible, point of communication to the chain of navigable lakes by which this section of country is every where intersected. Its natural disadvantages are very few, and capable of being greatly improved; the harbor, when completed, (which it will be this summer,) will be one of the safest and most convenient ones between this and Quebec, and capable of sheltering any number of ships that are likely at any time to be found on these waters.

As no natural intercourse, however perfect, if comparatively distant and prolonged, can be of much benefit to the district from whence it proceeds, so neither will a communication, however short, be of much utility, if it does not possess a proper outlet for the produce of the country at some convenient harbor.

That the position of Port Hope is particularly favorable for the termination of such a work, must appear evident to every partial observer; it is not only the shortest possible distance from Lake Ontario to Rice Lake, possessing a safe and commodious harbor, but its eminences present every facility for defence in case of war; and the communication from Lake Ontario to Rice Lake up to Lake Simcoe, can by this route be completed for a sum not greater than is necessary merely to open the navigation from the mouth of the Trent to Rice Lake. These are facts that cannot be refuted, and which the reporter sincerely hopes will induce its being adopted and undertaken by the province in lieu of the round-about and expensive route by the Trent.

An estimate follows the report, which it is not necessary we should particularize; it is sufficient to say that it amounts to £101,426 6s. 6d. currency.

LONDON AND ONTARIO RAILROAD.—We perceive, by the True Patriot, that the first meeting of the friends of the London and Gore Railroad was held in London on the 7th ult. and we rejoice to find that stock to the amount of 400 or 500 shares was taken up before the meeting adjourned. A committee to select subscriptions along the line of the contemplated road was appointed, and stock books placed in their hands, or transmitted by mail to such gentlemen of the committee as were not at the meeting. The Act requires that stock to the amount of £25,000 be taken up, before the company can be completely organized; and it appears by a letter received this day, by E. A. Talbot, Esq., from the Secretary of the Committee at London, that there is no doubt of that sum being subscribed by persons possessing property on the line of the intended road. We have heretofore avoided making any allusion to the act of Incorporation of the London and Gore Company, solely because we felt apprehensive that the undertaking of such magnitude was beyond the means of the persons most interested in carrying it into effect; and friendly as we have ever been to public improvement, and highly appreciating the zeal of the gentleman to whose management the procuring of the charter was committed, we were unwilling to throw any obstacle in his success in so important an

undertaking. When it is considered that every landholder within ten miles of the intended road must be greatly benefitted by its completion, and that the produce of the finest and most fertile part of the country of America must, in a few years, be of little value unless some such improvement is effected, we are not at all surprised to hear that the farmers are coming forward to take stock, solely under the influence of an impression that, should the business on the roads make no return in the way of tolls, their lands would increase in value to such an extent as fully to justify the investment of whatever capital they may possess. The sum of £100,000 is said to be amply sufficient to make an excellent iron or wooden railroad from London to Hamilton, or Dundas, and if any farmer whose land would be increased in value 50 per cent. by the completion of so magnificent an undertaking, was to take up two shares, which for the most would only subject him for two years to a quarterly payment of £3 2s. 6d. it would be unnecessary to open a stock beyond the line of the intended road. Should the Company succeed, (as we hope sincerely they will,) in making the road from the head of the Lake to London, there can be no doubt of its being continued to the navigable waters of the Thames, or of its being one of the most profitable investments of capital in this country. A single glance of Samuel Taylor's new map, on which the intended line of the road is marked, and the extensive region bordering on Canada, west of the St. Clair, will be sufficient to show that in the event of its continuance either to the navigable waters of the Thames, or to the south-western extremity of Lake Huron, the Company must derive all the benefit of the extensive carrying trade and travel now going on between the eastern and western States of the Union.—[Toronto Courier.]

Wedge Wheels—Indian Arts and Manufactures. By JOHN ROBISON. [From the London Mechanics' Magazine.]

SIR,—In the Mechanics' Magazine for April there is an article entitled "Hancock's Wedge Wheels," in which, although no direct claim of novelty of invention is made by your correspondent, most readers will be led to infer that the construction of the wheel is new, and the invention of Mr. Hancock. I beg, therefore, to state that as far back as the year 1811, I had wheels with the spokes and naves of the same identical construction, made at Hyderabad, for some artillery carriages. I had a pair made at the same time for a currie, in which the nave was fixed on the axle by double nuts and an oil-tight cup, like Collinge's patent. In the putting together of these wheels, I used a precaution which appears to have escaped your correspondent. I made the butts of the spokes a little too full to admit of their touching the metal box, leaving a vacuity or near an eighth of an inch between them; a corresponding opening was left at the joints of the felloes, and the consequence was that on the tire hoop being put on, its contraction forced the spokes home to the box, and wedged them so hard together at the shoulder, that, even in the hot climate of India, I never observed a spoke become loose by shrinking; it need hardly be said, that the bolt-holes in the butts of the spokes require to be made of an oval form, to admit of the contraction taking place without bending the bolts. My naves were of gun-metal, and I found it better to have the holes of the inner flanch tapped, than to have nuts on the bolts.

A construction very analogous to this has long been in use in the Madras Artillery, in which service I have always understood that it gave every satisfaction. I once witnessed

a striking proof of its good qualities, in seeing a field-piece upset in the course of a charge over some rocky ground, and dragged some yards on its back, until it again righted, without any thing appearing to have given way; in such cases, when the wheel fails, the butts are all left firmly seated in their place, and the spokes break off near to the edges of the flanges.

I observe you have an Indian correspondent, who occasionally gives you descriptions of tools and practices in use among the native workmen. He has omitted to notice one which may be made useful in this country: the saw of an Indian workman always cuts in the pull, and not in the push; by this means a thin bladed saw may be made to do the work of a strong one, as no application of strength in pulling will cause it to buckle. If small saws, such as key-hole saws, were formed to cut by the pull, they would not be so liable to break as they are at present; and if saws for pruning fruit trees were so made, they might be fixed to the ends of long poles and worked from the ground, without requiring the use of a ladder. The common hand-saw in India is from 14 to 18 inches long, with a handle like that of a duelling pistol.

If you have the means of communicating with your Bombay correspondent, you should ask him to get you an account of the processes followed by the lapidaries of the north-west of India, where they make cups and other things of agates, at so cheap a rate, and yet so much cut, that they must have some expeditious methods which may be useful here if known.

I am, sir, your very obedient servant,
JOHN ROBISON.
9 Atholl Crescent, Edinburgh, March 14, 1834.

On the Color of the Air and of Deep Waters, and on some other Analogous Fugitive Colors. By COUNT XAVIER DE MAISTRE. Translated from the Bib. Univ. by Prof. J. Griscom. [From the American Journal of Science and Arts.]

(Continued from page 308.)

Having considered the opaline property of air and water, let us now examine the production of opaline blue in opaque bodies.

The cause of the blue tint assumed by the fine skin which covers the veins has hitherto been a doubtful question. This phenomenon, which is uniformly connected with the opaline property of the skin, is mentioned by Leonard De Vinci; let us first see the conditions under which it exists.

First, the vein must be deep enough to absorb all the light transmitted by the skin; and the skin must have the thinness requisite to transmit a great portion of the light. If the vein is thin, it reflects the color of the blood and becomes red;* this color, mixing with the opaline blue of the skin, forms those violaceous tints observable on the countenances of persons of dark complexion (brouille). If the vein is still thinner and nearer the epidermis, the transparency of the skin increases and the red color is more distinct; finally, a tissue of imperceptible veins, very near the surface of the skin, colors the cheeks and lips of young people of a fine complexion, with a uniform red; but we may observe that these beautiful colors have not the exact tint of the blood which produ-

* It is thus that a wide barometer tube, filled with colored wine, appears black, while a thin thermometer tube, under like circumstances, is of a beautiful purple.

ces them; it partakes of the opaline blue, which renders the color slightly carmine, and tinges sometimes the lips of sanguine people of a purple or violet hue.

Thus, the difference which may exist in the size of the blood vessels, and in their proximity to the surface, is sufficient to produce all the shades of blue, violet, red and purple, which are seen in the human face, by the mixture of the opaline blue of the skin with the red of the blood.

The red color of the blood is not the cause of the blue tinge of the veins; it might be black or green without occasioning any change; it is enough that the coloring principle absorbs all the light transmitted by the skin. This result may be artificially produced by a very thin plate of ivory, which has nearly the same effect as the skin. If a few drops of ivory black, prussian blue, cochineal, or bile, sufficiently dense to be opaque, be placed on one of its surfaces, they produce alike a blue tint on the opposite surface, because they equally absorb all the light transmitted by the ivory. But if, instead of a coloring matter which absorbs light, we use an opaque reflecting coloring substance, we have a tint compounded of opaline blue and that of the color employed.

The red oxide of lead placed on the ivory gives on the opposite surface a slight tinge of carmine. Some painters avail themselves of this property of ivory, in sketching the cheeks and lips of their portraits, by placing a coat of minium on the opposite surface, and thus obtain indirectly the effect of a slight use of carmine.

But if, instead of minium, Naples yellow be put on, there is on the opposite surface a green spot. In both these cases, then, the opaline blue is mingled with the proper tint of the opaque reflecting color, while the blue alone appears when the applied color absorbs the light transmitted by the ivory.

The mixing of colors in oil painting furnishes still more evidently an opaline blue. The most common case is the mixture of white with vegetable black, which produces a bluish shade. Various writers have adverted to this, and as indigo and prussian blue, in mass, approximate to black, it was thought in former days that blue was a mixture of light and shade; but the blue produced on this occasion belongs exclusively to white and not to black, as is proved by the following process: two plates are painted of a grey color, one by a mixture of ceruse and charcoal ground in oil, the other by superadding to a coat of white a glazing of charcoal, so that they may both have the same depth of shade; the first will be bluish, the second grey, without a mixture of blue.

As transparent colors in oil lose almost wholly the color which they have in a pulverulent state, and thus in mass approach to black, the mixture of them with white produces also opaline blue, which modifies the natural shade of the color.

Every painter knows the striking difference there is between the color of a mixture of cochineal lacker with white, and that which the same lacker produces as a thin coating upon a white ground; the first is of a violet color, and the second has all the purity and splendor which is characteristic of this fine color. Thus artists, who wish to obtain the beautiful red of cochineal or madder in their draperies, always employ these lackers in mixture (en glacis). Opaque reflecting colors, such as Naples yellow, chromate

of lead, yellow ochre, produce, as well as white lead, opaline blue, by a mixture with black, and the effect is still more sensible. These compounds, according to theory, ought to give only shades of yellow; and yet their tints are decidedly green, so that they are often used for painting the deepest verdure of landscapes. In these cases it is the opaque reflecting color which is opaline.

I have stated the most remarkable instances of the singular property which certain colors possess of producing opaline blue by mixture, but there is an infinite number of other modifications less apparent, resulting from mixtures of compound colors, which it would be impossible to describe, but which may always be pre-ascertained by the following rule: *When white lead or opaque reflecting colors are mixed with black, or with transparent colors, there is a production of blue, and a consequent modification of the primitive shade of the coloring matter.*

These modifications are often very slight, but they do not escape attentive observers. In the preceding observations I have described effects, well known, it is true, but which appear to have no analogy to each other, and which appear to me to depend wholly on the peculiar property which the blue ray possesses of being reflected, in preference to other rays more or less refrangible, by the simple mechanical resistance of the molecules of bodies which transmit light. This resistance takes place in large masses of transparent fluids, as in air mixed with watery vapor, and in water mixed with air.

It takes place also in opaque bodies which are less transparent, but under smaller dimensions. Lastly, it is observed in white opaque or colored bodies, as in the fine skin which covers the veins, and in mixtures of colors.

Plan for raising Vessels sunk in Deep Water.

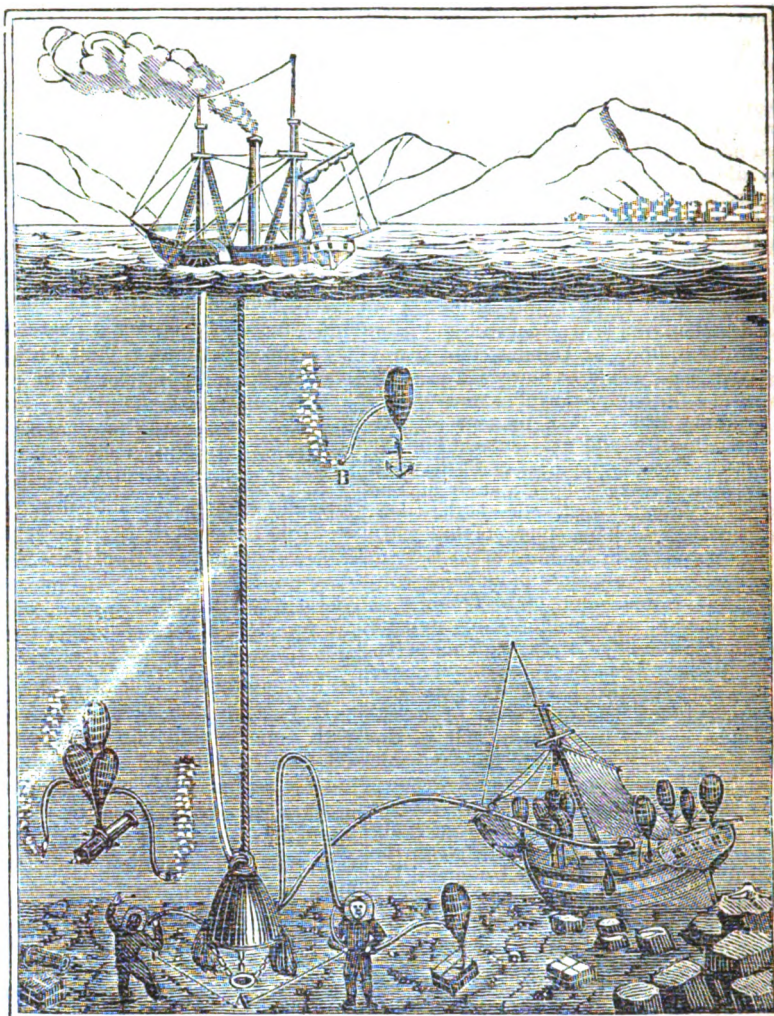
By Mr. JOHN MILNE, Teacher of Architectural and Mechanical Drawing, Edinburgh. [From the London Mechanics' Magazine.]

SIR,—Having read in a recent number of your Magazine, that Dr. Hancock has proposed the use of air as a power for raising goods, &c. from the bottom of the sea, I beg to forward to you a pamphlet of mine published in 1828, which contains, among other plans, two on this very principle. They attracted some share of attention at the time of publication, but neither of them has ever, as far as I am aware, been carried into actual practice. Should you see cause, I shall be glad to find that you have drawn the attention of the public to this important but neglected subject. I am, respectfully, your obedient servant,

JOHN MILNE.

The pamphlet obligingly forwarded to us by Mr. Milne,* is entitled "Plans for the Floating Off of Stranded Vessels; and for raising those that have foundered; with an Improved Method of Carrying Vessels over Banks in Shallow Water." Of the two plans to which Mr. Milne more particularly invites our attention, one is adapted to the case of ships sunk near the shore, and the other to deep sea operations. Both are on the same principle—both exceedingly ingenious, and, in our humble judgment, quite practicable. We shall extract the author's description of the first at length, and beg to

* Author of the excellent "Practical View of the Steam Engine."



refer those who may be desirous of further information on the subject, to the work itself, which is altogether well deserving of perusal.

"I shall now describe the application of these air buoys,† to the raising of a vessel that has been sunk in deep water; but before doing so, it may be proper to mention the disadvantages attending the common practice. At present we pass one or more chains round the wreck, and by means of these chains suspend it by one, or between two floating vessels, a process which in deep water is attended with much expense and uncertainty, because no sufficient power can be applied from the floating vessel to raise the wreck at once to the surface. Moreover, from the great weight of the wreck, and from the manner of placing the chains about it, they are liable to cut the timbers of the ship, as in the case of the Comet steam-boat (see Narrative of the Loss of the Comet steamboat). The operators must wait till the lowest ebb of the tide, then, pulling up the ends of the suspending chains and securing them, the rising of the water acting upon the floating vessels, lifts the wreck from the bottom; and while the tide rises, they proceed with their load towards the land, until the suspended vessel again rests upon the bottom, by the water becoming less in depth. Hence, they cannot, during one flowing tide, raise the sunk vessel more than

the height to which the water had flowed from its lowest ebb, which at a maximum on the British coast does not exceed sixteen feet, and they must now suspend their exertions till the end of nearly twelve hours.

"Before that period arrives, however, a storm comes on, the workmen desist from their operations, and it not unfrequently happens, that before they can again commence their labors, the object of their toils has broken up, or has been imbedded in the sand.

"These inconveniences being obvious, I propose the following methods. The place of the wreck being ascertained by an improved drag, which at present I shall not describe, let her state be ascertained from a diving bell, and let there also be sent down with it a number of the before-mentioned buoys, in a perfectly collapsed state; and let the diving operator stow them away in that condition below decks, also hooking on as many about the ship as shall collectively be sufficient to buoy it up when inflated; for their inflation let him insert a small copper tube, which is attached to a leathern pipe,* into the nozzle of each of the buoys (see engraving, fig. A), which pipe, communicating with the air within the diving bell (air being forced down into the steam-vessel†), will also inject air into the buoys, if they be held up, at the commencement of filling, a little higher than the level of the water at

† "Leathern bags, well sewed and tanned or barked in the best manner"—"made nearly air-tight, and proof against the attacks of vermin." [p. 5.] Mr. Milne, in a manuscript note on this passage, in our copy of the pamphlet, says: "Open-mouthed vessels of tin-plate would be preferable, to be inverted when in use, and packed into each other when not in use."—[Ed. L. M. M.]

* This pipe should be sufficiently long to admit of the operator hooking on other buoys, while one bag is in the act of being filled with air.

† To be stationed over the sunken ship, (as explained in a preceding section of the pamphlet,) and provided with an air-compressing pump and a common blowing pump.—[Ed. L. M. M.]

the mouth of the bell.* Or these envelopes may be speedily filled, by letting down a number of metallic vessels, charged with thirty or more atmospheres, which being discharged will quickly inflate them at the convenience of the operator, by his turning a common stop-cock, which, in either of these methods, is all he has to do.

"Having, by one or other, or by both of these methods, filled a sufficient number of buoys, the wreck will begin to rise whenever the bags have displaced that bulk of water which is equal to the weight of the wreck while immersed in the same fluid. Let the weight to be raised from a depth of 65 feet be 300 tons avoirdupois, = 672,000 lbs. \div 64 lbs., the medium weight of a cubic foot of sea water, = the buoyant effect of 10,500 cubic feet of air discharged from the diving bell at that depth.

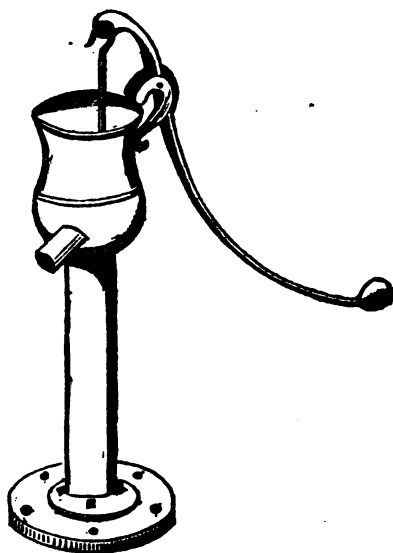
"But by using air previously compressed to thirty atmospheres, and discharged at the same depth, and by allowing the capacity of each vessel so charged to be $2\frac{1}{2}$ feet, then $27\frac{1}{2} \times 2\frac{1}{2} = 67\frac{1}{2}$ cubic feet of air discharged from one compressed vessel, \times 64 lbs., the buoyant effect of one foot of air in sea water, = 4,320 lbs. buoyant effect of air originally compressed into one vessel; but the load to be raised was 672,000 lbs., therefore, \div 4,320 lbs., = 155.5, &c. compressed air vessels, allowing the apparatus to have no weight of itself. I would also propose the use of such leather buoys for giving expedition to common diving bell operations, in bringing all kinds of goods, cannon, anchors, &c. from the bottom; and also for clearing such rivers as the Tay, below the town of Perth, and many such places, where navigation and the salmon fishing are greatly impeded by large stones at the bottom of the river. The stones might be Lewis'd† at low water, or they might be bored from a diving bell, the collapsed buoys made fast, and at convenience they could be inflated from a boat by a common forcing pump; the stones being suspended in the water may be towed to any place for the purpose of embanking, where they could be instantly sunk by pulling up the end of the escape pipe, B; the more immediate use of which pipe is to allow the superabundance of air to escape, which, while at the bottom of the sea, is compressed by the hydrostatic action of the surrounding medium; but immediately when the envelope begins to ascend with its load, the pressure of the water becomes less, and in the same proportion will the air expand within these bags, and ultimately would burst them, were it not that this pipe allows it to escape. It should be about nine feet long,

* Even the azotic gas discharged by the operators might be employed for this purpose; the quantity of common air deteriorated by them being very considerable. Pepys and Allen, in their *Essays on Respiration*, state that an easy inspiration is about 16 cubic inches, and that the subject of their experiments made about 19 of these per minute; for which it can be shown by calculation, that four men would discharge from their lungs, in one hour, a volume of air having a buoyant power equal to 2702.08 lbs. avoirdupois, or thereby.

† The air-buoys being at a depth of 65 feet, would be compressed by the water with a force equal to the weight of two atmospheres.

‡ A Lewis consists of three bars of iron, which are square on their section, when cut at right angles to their sides; these being placed side by side, form something like a dove-tail tenon; a corresponding mortice is cut in the stone to be raised, and the two outside bars are first placed within this aperture; the centre bar being throughout of equal thickness, is next placed between them, and a bolt with a clutch-ring is passed through the heads of all the three, by which the stones may be suspended. This instrument has long been in use, and is almost indispensable in a massive building.

having its lower end weighed down by a nose of metal, from which the air will always be retained within the bags till its expansive force becomes more than the pressure of water at the under orifice of this escape-pipe. Indeed, the maximum expansive force of air within its envelope may always be known by the length of this pipe B. Such an escape pipe must also be attached to each of the buoys employed in raising the wreck from the bottom of the sea. I shall only remark, that it would not be necessary for these buoys to be absolutely air tight, because they may be kept sufficiently full by the method already pointed out. Nor would there be any chance of their bursting by their buoyant power, which could never exceed the weight of their bulk, and they would require to be just as strong as to be capable of retaining water without bursting when filled with it, and suspended by their hooks from a pin in the wall. I would also propose the use of these buoys for floating the large stones which are used in forming sea-fences or dykes; the stones are usually carted from low water mark, but the method here proposed would be less expensive."



CAST IRON PUMPS.—The following drawing represents a pump about two and a half feet high, and is designed for cisterns, particularly in kitchens, barns, green-houses, and other out buildings. The pump may be placed within the building, and the water drawn from a cistern without the building by the aid of a bended tube of copper or lead. The following are the directions for setting and using.

Unscrew the three screws in the bottom of the pump, and it will then be separated into three parts.

After placing the pipe into the well, carry the other end through the floor and sink, or where you wish the pump to stand; then put the bottom plate over the end of the pipe about three-fourths of an inch, and with a piece of wood the shape of an hen's egg, you will easily bend the lead into the place left in the plate for it; then hammer it down level with the top of the plate, and screw down the plate with wood screws, placing a piece of leather or cloth under the plate to make it tight, if it is set in the bottom of the sink; then place the leather valve and pump as you took them apart, and screw them together tight, after having wet the leather in warm water.

The pipe should be placed a little descending from the sink to the well, so that the water will

run out freely when necessary. This pump is so constructed, that by raising the brake clear up, the valves are opened, and the water passes off immediately out of the pump and pipe, which operation is necessary in cold weather to prevent it from freezing.

Manufactured by Scott, Keith & Co., East Bridgewater, Mass., Patentees, and sold by H. Huxley & Co. 81 Barclay street, New-York. Price, small size \$3; large size \$10.

THE THAMES TUNNEL.—The completion of this great undertaking seems, if practicable, likely soon to be attempted, as several scientific and distinguished persons have lately visited it, and on Monday last Mr. Brunel received many of the members of the Royal Society to view it, and conducted them to its extreme end, where tables were laid out, having drawings, &c., showing the whole progress of the work, the great difficulties that have already been overcome in carrying the tunnel 600 feet under the Thames, and the data upon which the engineer confidently anticipated being enabled to complete this bold undertaking, were the necessary funds supplied. Mr. Brunel, at considerable length, detailed the exertions that have been used to overcome the difficulties arising from the irruption of the river, and stated that in the course of the work the miners had for twenty-seven days pushed on the tunnel over a quicksand. The members of the Royal Society, after leaving the tunnel, proceeded to view the experimental arch constructed on a new plan by Mr. Brunel. The structure is built with bricks and Roman cement, and consists of two semi-arches, springing from the same pier, without any support. By this plan an arch of the greatest span may be constructed without centering, and demonstrating, as the projector observed, the practicability of building a tower of brick-work 50 feet high, and 200 feet in diameter, and sinking the whole gradually in one mass. By this method it is intended to complete the circular and winding carriage approaches to the tunnel. It may be interesting to observe that of the two semi-arches one is shorter than the other, and it has been loaded with about eleven tons of iron for the last nineteen months, without any sensible change in its position. The company, after expressing their high satisfaction at the novelty of the works of the tunnel, and the last invention, partook of a cold collation.—[English paper.]

MECHANICS IN CANTON.—There is no machinery, properly so called, in Canton. Much of the manufacturing business, required for the supply of commercial houses in the city, is done at a town situated at a short distance; still the amount of labor performed in Canton is very considerable. There are about 17,000 persons in Canton employed in silk weaving. The number of persons engaged in manufacturing different kinds of cloth is about 50,000. They occupy 2,500 shops, averaging usually twenty hands in each shop. Some of the Chinese females, who devote their time to embroidery, secure a profit of from twenty to twenty-five dollars per month. The number of shoemakers is more than 4,000. Those who work in wood, brass, iron, stone, and other materials, are numerous; and those who engage in each of these occupations form a distinct community, and are governed by their own laws and regulations in their business. The barbers form a separate department. No man can act as tonsor without a license. The number of this fraternity in Canton is more than 7,000. The whole number of mechanics in the city is estimated at 250,000.

MORRIS CANAL.—We learn that owing to a difference between the Morris Canal Company and the Jersey City authorities as to the price of property, the contemplated continuation of the Canal will probably pass through Harsimus, and terminate nearly a mile north of the Ferry, instead of the place originally designated, which was contiguous to the termination of the Railroad.—[Newark Daily Advertiser.]

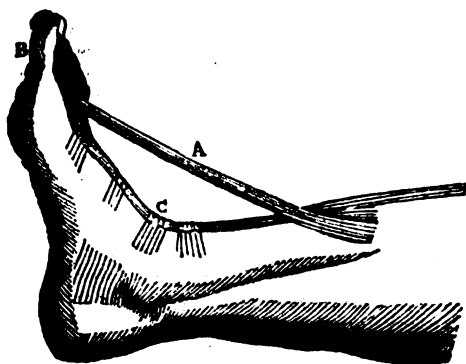
We copy the following from the forthcoming number of the *Mechanics' Magazine* :

Animal Mechanics, or Proofs of Design in the Animal Frame. [From the Library of Useful Knowledge.]

(Continued from page 248.)

We may perceive the same effect to result from the course of the tendons, and their confinement in sheaths, strengthened by cross straps of ligament. If the tendon, A, (fig. 27) took the shortest course to its ter-

Fig. 27.

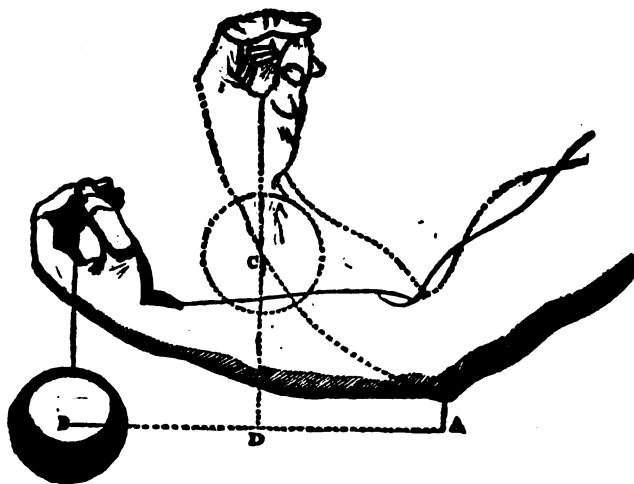


mination at B, it would draw up the toe with greater force; but then the toe would lose its velocity of movement. By taking the direction, C, close to the joints, the velocity of motion is secured, and by this arrangement the toes possess their spring, and the fingers their lively movements. We may take this opportunity of noticing how the mechanical opposition is diminished as the living muscular power is exhausted. For example, in lifting a weight, the length of the lever of resistance will be from the centre of the elbow joint, A, (see engraving on the next column, fig. 28,) to the centre of the weight, B. As the muscles of the arm contract, they lose something of their power; but in a greater proportion is the mechanical resistance diminished, for when the weight is raised to C A D, it becomes the measure of the lever of resistance.

A more admirable thing is witnessed by the anatomist—we mean the manner in which the lever, rising or falling, is carried beyond the sphere of action of one class of muscles, and enters the sphere of activity of others. And this adaptation of the organs of motion is finely adjusted to the mechanical resistance which may arise from the form or motion of the bones. In short, whether we contemplate the million of fibres which constitute one muscle, or the many muscles which combine to the movement of the limb, nothing is more surprising and admirable than the adjustment of their power so as to balance mechanical resistance, arising from the change of position of the levers.

In the animal body there is a perfect relation preserved betwixt the parts of the same organ. The muscular fibres forming what is termed the belly of the muscle, and the tendon through which the muscle pulls, are two parts of one organ; and the condition of the tendon indicates the state of the muscle. Thus jockeys discover the qualities of a horse by its sinews or tendons. The most approved form in the leg of the hunter, or hackney, is that in which three convexities can be distinguished,—the bone, the prominence of the elastic ligament behind the bone, and behind that the flexor

Fig. 28.



tendons, large, round, and strong. Strong tendons are provided for strong muscles, and the size of these indicate the muscular strength. Such muscles, being powerful flexors, cause high and round action, and such horses are safe to ride; their feet are generally preserved good, owing to the pressure they sustain from their high action. But this excellence in a horse will not make him a favorite at Newmarket. The circular motion cannot be the swiftest; a blood horse carries his foot near the ground. The speed of a horse depends on the strength of his loins and hind quarters; and what is required in the fore-legs is strength of the extensor tendons, so that the feet may be well thrown out before, for if these tendons be not strong, the joints will be unable to sustain the weight of his body when powerfully thrown forward, by the exertion of his hind quarters, and he will be apt to come with his nose to the ground.

The whole apparatus of bones and joints being thus originally constituted by Nature in accurate relation to the muscular powers, we have next to observe that this apparatus is preserved perfect by exercise. The tendons, the sheaths in which they run, the cross ligaments by which they are restrained, and the *bursae mucosae** which are interposed to diminish friction, can be seen in perfection only when the animal machinery has been kept in full activity. In inflammation and pain, and necessary restraint, they become weak; and even confinement, and want of exercise, without disease, will produce imperfections. Exercise unfolds the muscular system, producing a full bold outline of the limbs, at the same time that the joints are knit, small, and clean. In the loins, thighs, and legs of a dancer, we see the muscular system fully developed; and when we turn our attention to his puny and disproportioned arms we acknowledge the cause—that in the one instance exercise has produced perfection, and that, in the other, the want of it has occasioned deformity. Look to the legs of a poor Irishman travelling to the harvest with bare feet: the thickness and roundness of the calf show that the foot and toes are free to permit the exercise of the muscles of the leg. Look again to the leg of our English peasant, whose foot and ankle are tightly laced in a shoe, with a

wooden sole, and you will perceive, from the manner in which he lifts his legs, that the play of the ankle, foot, and toes, are lost, as much as if he went on stilts, and therefore are his legs small and shapeless.

And this brings us naturally to a subject of some interest at present: we mean the new fashion of exercising our youth in a manner which is to supersede dancing, fencing, boxing, rowing, and cricket, and the natural impulse of youth to activity.

By this fashion of training to what are termed *gymnastics*, children at school are to be urged to feats of strength and activity, not restrained by parental authority, nor left to their own sense of pleasurable exertion. They are made to climb, to throw their limbs over a bar, to press their feet close to their hip, their knees close to their stomach; to hang by the arms and raise the body; to hang by the feet and knees; to struggle against each other by placing the soles of their feet in opposition, and to pull with their hands. No doubt if such exercises be persevered in the muscular powers will be strongly developed. But the first question to be considered is the safety of this practice. We have seen a professor of gymnastics, by such training, acquire great strength and prominence of muscles; but by this unnatural increase of muscular power, through the exercise he recommended, he became ruptured on both sides. The same accident has happened to boys too suddenly put on these efforts.

It is proper to observe, that when the muscular power is thus, we may say preternaturally increased, whether in the instance of a race-horse, an opera-dancer, or a pupil of the Calisthenic school, it is not merely necessary to put them on their exercises gradually in each successive lesson, but each day's exertion must be preceded by a wearisome preparation. In the great schools, like that at Stockholm, the master makes the boys walk in a circle; then run, at first gently; and so he gradually brings them into heat, and the textures of their frame are composed to that state of elasticity and equal resistance, as well as to vital energy, which is necessary for the safe display of the greater feats of strength and activity. This caution in the public exercises is the very demonstration of the dangers of the system. The boys will not be always under this severe control, and yet it is important to their safety.

We may learn how necessary it is to bring

* These *bursae mucosae* (mucous purses) are sacks containing a lubricating fluid. They are interposed wherever there is much pressure or friction, and answer all the purposes of friction wheels in machinery.

the animal system gradually into action from the effects of very moderate exercise on a horse just out of the dealer's hands. The purchaser thinks he may safely drive him ten miles, not aware that the horse has not moved a mile in a week, and the consequence is inflammation and congestion in his lungs. The regulation in the army has been made on a knowledge of these facts. When young horses are brought from the dealer they are ordered to be walked an hour a day the first week, two hours a day the second week, three hours a day in the third week. They are to be fatigued by walking, but they must not be sweated in their exercise. Horses for the turf, under three years old, in training for the Derby, are brought very slowly to their exercise, beginning with the lounge; then a very light weight is put upon them, and that gradually increased. Indeed, nothing can better show the effects of exercise in perfecting the muscular action than the consequence of the loss of one day's training. It will bring the favorite to the bottom of the list, and that without any suspicion of lameness; but from a knowledge of the fact, that even such a slight irregularity in his training will have a sensible effect on his speed. Shall the possibility of pecuniary loss excite the jockey to more care for his horse than we, in our rational and humane attention to the education of our youth, pay to their health and safety?

In reflecting on these many proofs of design in the animal body, it must excite our surprise, that anatomy is so little cultivated by men of science. We crowd to see a piece of machinery, or a new engine, but neglect to raise the covering which would display in the body the most striking proofs of design, surpassing all art in simplicity and effectiveness, and without any thing useless or superfluous.

A more important deduction from the view of the animal structure is, that our conceptions of the perfection and beauty in the design of nature are exactly in proportion to the extent of our capacity. We are familiar with the mechanical powers, and we recognize the principles in the structure of the animal machine; and, in proportion as we understand the principles of hydrostatics and hydraulics, are able to discern the most beautiful adaptation of them in the vessels of an animal body. But when, to our further progress in anatomy, it is necessary that we should study a matter so difficult as the theory of life, imperfect principles or wrong conceptions distort and obscure the appearances: false and presumptuous theories are formed, or we are thrown back in disappointment into scepticism, as if chance only could produce that of which we do not comprehend the perfect arrangement. But studies better directed, and prosecuted in a better spirit, prove that the human body, though deprived of what gave it sense and motion, is still a plan drawn in perfect wisdom.

A man possessed of that humility which is akin to true knowledge, may be depressed by too extensive a survey of the frame of nature. The stupendous changes which the geologist surveys—the incomprehensible magnitude of the heavenly bodies moving in infinite space, bring down his thoughts to a painful sense of his own littleness: "to him, the earth with men upon it will not seem much other than an ant hill, where some ants carry corn, and some carry their

young, and some go empty, and all to and fro a little heap of dust."

He is afraid to think himself an object of Divine care; but when he regards the structure of his own body, he learns to consider space and magnitude as nothing to a Creator. He finds that the living being which he was about to condemn, in comparison with the great system of the universe, exists by the continuance of a power no less admirable than that which rules the heavenly bodies; he sees that there is a revolution, a circle of motions, no less wonderful in his own frame, in the microcosm of man's body, than in the planetary system; that there is not a globule of blood which circulates but possesses attraction as incomprehensible and wonderful as that which retains the planets in their orbits.

The economy of the animal body, as the economy of the universe, is sufficiently known to us to compel us to acknowledge an Almighty Power in the creation. What would be the consequence of a further insight—whether it would conduce to our peace or happiness, whether it would assist us in our duties, or divert us from the performance of them,—is very uncertain.

CHAPTER VII.

BOOKS REFERRING TO THESE SUBJECTS MORE GENERALLY.—Ray, "On the Wisdom of God manifested in the Works of the Creation," has several chapters on the animal economy.

Archdeacon Paley has composed a work of high interest, by taking the common anatomical demonstrations, and presenting them in an elegant and popular form. His work is entitled *Natural Theology*; or *Evidences of the Existence and Attributes of the Deity, collected from the Appearances of Nature*.

The celebrated Fenelon has, with the same pious object, composed a small duodecimo, in which he draws his arguments from the structure of animal bodies.

Wollaston, in the "Religion of Nature delineated," has the same train of reflection to prove that there can be no such thing as chance operating in and about what we see or feel; and he says, with great propriety, "How may a man qualify himself so as to be able to judge of the religions professed in the world; to settle his own opinions in disputable matters; and then to enjoy tranquillity of mind, neither disturbing others, nor being disturbed at what passes among them?"

Derham, in sixteen sermons, preached in 1711, at the lecture founded by Mr. Boyle, treats at length of the structure of our organs. These are also published separately under the title of *Physico-Theology*; and they naturally suggest to learned divines the expediency of sometimes expounding to their hearers the evidences of design apparent in the universe, as a sure means of enlightening their understandings, elevating their views, and awakening their piety.

This cultivation of the mind, by exercising it upon the study of proper objects, is a man's first duty to himself. Without it he can have no steady opinion on points of the nearest concern. He is wrought upon by circumstances which ought not to sway the mind of a sensible man; at one time depressed to the depths of despondency, and

* Bacon.

at another exalted into unreasonable enthusiasm. Without such cultivation, were a man to live a hundred years, he is at last like one cut off in infancy.

AGRICULTURE, &c.

ON THE MANUFACTURE OF POTASH.—It is remarkable that the manufacture of potash, which has formed so considerable and profitable an employment for the industry of the northern states, has never been in operation in Virginia. Of course no satisfactory answer to the following letter of inquiry on this subject was to be obtained at home—and it was therefore sent to a gentleman who resides at Cayuga county, New-York, whose location, as well as his general information, it was inferred, would enable him to give the statements required. He has kindly complied with the request, by sending the communication inserted below. We also add the article on this manufacture in Rees' Cyclopædia.—[Farmers' Register.]

The enormous waste of wood throughout Virginia and the southern states, induces me to inquire whether a considerable saving to the country may not be effected, by converting a portion of it into potashes, and by preparing the bark of certain descriptions of trees, for tanning and dyeing.

In clearing our lands, it is the practice to burn all the wood which is not used for fence rails, and no care is taken of the ashes. It is well known that from the branches and twigs of oak, a larger quantity of potash is obtained than from the same weight of the trunk of the tree, and that the branches are entirely lost with us in clearing land.

Now, my object in addressing you is to request that you will obtain and publish the most simple and clear directions for making and preparing potashes for market, embracing the cost of all requisite apparatus, labor, &c., and the quantity produced from a given weight or measure of white oak, red oak, and other woods common to our country. The preparation of bark for exportation might also be valuable, if the mode of doing it was made known to our farmers.

QUERIST.

William Culver, Esq., from whom the following particulars were obtained, has been concerned in the manufacture of potash for many years.

It is estimated that 450 bushels of good house ashes will make a ton of potash. Some skilful workmen can produce more. The manager of his works contracted to make a ton from every 425 bushels; and he has even made that quantity from 420 bushels; but it is more than common workmen can produce.

Of field ashes about 550 bushels are required to make a ton. This difference is owing to impurities, and to a want of compactness in the ashes. Great care should be used in scraping them up, so as to exclude as much dirt as possible. It requires more care to work them.

At this time, house ashes are worth 10 cents a bushel, at the ashery; and field ashes, 7 cents.

One man can manage an ashery, consisting of the different vessels hereafter to be mentioned. There ought to be six leaches (or leach tubs), each ten feet long, constructed in the following manner: Lay two parallel sills, one a little higher than the other. On these the bottom of the leaches are laid—made of boards four feet long, not grooved and tongued, but breaking joints. These should be a foot high from the ground, so as to admit a trough under the lower edge to catch the ley, and to lead it into the ley tub, which may be a half hogshead sunk in the ground, and which will serve for two leaches.

The boards, four feet in length, which constitute the sides of the leach, are held together by two rectangular frames; the lower one resting on the bottom is eighteen inches, and the

NEW-YORK AMERICAN.

MAY 24—30, 1834.

LITERARY NOTICES.

No. XXV.

Galena, Upper Mississippi, February 22d.

When I came to look round, in the morning, at the place where you last left me so fortunately accommodated, I found that our host, an enterprising Kentuckian, had been very fortunate in his choice of a location: it was a rocky land, as I was assured, healthful dell, about a hundred feet below the surrounding prairie, abounding in lead ore, and having a fine stream, with a considerable cascade, winding through its wooded bosom. His house was situated among a clump of ashes and elms, and a crystal spring burst from beneath an ancient sycamore within a few yards of it, in what resembled a torrent rather than an ordinary fountain of water, making altogether in summer a most delicious retreat, and affording even in winter a very agreeable change from the windy prairie above. But inviting as it appeared, this sequestered spot would not seem equally attractive to every one who should see that strong block house, within a few hundred yards of this peaceful dwelling, and know that it is thus placed out in the naked prairie, to prevent the secret approach of a lurking foe, when the family of the miner resort within its wooden walls for protection. Passing this block house, after an early breakfast, we struck a track leading to the Platte Mounds, which were distinctly visible, as they reared their blue tremontane peaks in the morning air: we travelled through a beautiful country of mingled grove and prairie, while large herds of deer were occasionally to be seen roving about for miles away. Frequently, in places where no other traces of man were to be seen, we would come to trenches opened by the miners, who had either been driven away by the Indians, or abandoned the pursuit of mineral in one place to try it in another. These trenches bore exactly the appearance of a grave, and are about the same size, and you meet sometimes in a few miles ride, not one or a dozen, but hundreds; the high price of lead, before the Winnebago difficulties of '28, having attracted a vast number of adventurers to this region, who have since abandoned it for the mineral regions of Missouri. In one place, at last, we saw two miners at work out on the prairie, off far from any house; and finding, on approaching the spot where they were sinking the shaft, that they had a windlass at work, my friend politely consented to wait till I could descend and see how things looked below. I was let down by the rope in a few moments, and passing through an upper crust of rich soil, at least three feet thick, a stratum of gravel succeeded, and then coming down to the clay, I found a solitary miner with his pick, at work upon a vein of lead ore. He was a northern man, from the State of Maine, and seemed glad to see any one from so near home, as he considered New York, when viewed from this remote point. I shook hands with him, and pocketed two or three specimens of the mineral which he struck out for me. A push of the rope then set them turning the windlass above, and my resurrection from the narrow place was effected in a few moments. There was some of the afternoon left when we arrived at the Platte Mounds; but it was late on the fourth day from Prairie Du Chien, when we reached Galena. Here, I have been sorry to lose my late agreeable fellow-traveller; and a fresh thaw having laid an embargo upon travelling by melting the snows, and rendered the streams impassable, I have employed my time, as much as possible, in looking about Galena. The mud is so deep that it is impossible to go afoot, and as these steep hills are unfit for carriages, the children going and returning from school pass the door of my lodgings, on horseback, every morning and evening; three or four boys and girls sometimes being piled on before and behind an old negro, till the mass of heads, arms and legs belonging to the juveniles, makes the fabric look like the wood-cut in the nursery book of that celebrated ancient female's residence, who had so many children, "she did not know what to do."

The population of Galena is about 1000, and that of Jo-Davies county, in which it is situated, is computed at 5000; a very large proportion of which is engaged in mining operations. The town, for its

upper, near the top of the leach, three and a half feet wide.

On the bottom of the leach, lay small sticks crossing each other, to the height of two inches, for the purpose of letting the ley run off freely. On these place straw, to be four inches thick when well pressed down, to prevent the ashes from washing through, and mixing with the ley. Three bushels of lime to each leach are spread on the straw: its effect is to facilitate the melting of the potash. Every third time that the leaches are filled, new lime is to be applied after ejecting the old.

The ashes, when thrown into the leaches, must be made compact by pounding it down. In this way a leach will hold 60 bushels.

The leaches are worked in pairs. One pair may be running while the second is soaking, and the third is being emptied of old ashes, or being filled with new. This arrangement prevents the workman from losing time by waiting, or from being too much hurried at another time.

Two potash kettles, of 90 gallons each, are wanted for boilers, and may cost about \$35 a piece. These are set in arches. Several sugar kettles, containing about 20 gallons each, will also be wanted for coolers.

The manufacture of potash is generally commenced in the spring, when there is no longer any danger from freezing.

Ley, too weak to bear an egg, is not put into the boilers, but is used for wetting such leaches as have not begun to run.

During the boiling, a dipping pan is placed in each boiler, resting on the bottom, to catch the black salts as they settle; and when the pan is full, it is emptied from time to time. By this process, the ley will not become so thick, and consequently evaporate faster.

When the strong ley (such as will bear an egg,) from the two leaches, is all poured into the boilers, then increase the fire. For this purpose, good dry wood is necessary. The black salts are now to be returned to the boilers; and there will be a danger of the liquid running over. This is prevented by dipping it up and pouring it back into the boiler. Repeat it till this disposition to rise over shall disappear. Then raise the heat still more till the potash is perfectly melted, and becomes almost as thin as water. It is then to be dipped out into the coolers, being careful to have them very dry. Let the potash stand till next day—it will crack into four quarters. Turn it out, and it is fit to barrel.

My informant suggests there would be a great advantage in having some person to start the works who was well acquainted with the business. D. T.

Article on Carbonate of Potash in Rees' Encyclopædia.—The potash of commerce, or black potash, as it is also called, is universally procured from the combustion of wood; and therefore its preparation can only be undertaken with success in those uncleared countries where are vast natural forests, and where, from the imperfection or distance of transportation, the value of timber is no more than that of the labor required to fell it. The only districts in Europe in which any considerable quantity of potash is made, are the mountainous forests in Germany, and the extensive woodland tracts of Poland and Russia. The British market is principally supplied from the United States, a country in which, from its rapid increase of population, there is a constant demand for cleared land, for the purpose of agriculture; and therefore, where timber is looked upon rather as an incumbrance than as contributing either to the beauty or the value of the ground on which it stands.

The American method is to pile up the wood, as soon as it is sufficiently dry to burn, in large heaps, and reduce it as quickly as possible to ashes: these ashes are then put into a wooden cistern, with a plug at the bottom of one of its sides, and a quantity of water, sufficient to make a strong lixivium, is added. After standing for

an hour or two, the plug is withdrawn, and the water holding the potash in solution runs out, leaving the earthy parts till impregnated with a portion of alkali in the cistern. This solution is then evaporated to dryness in iron pans, and hastily fused into compact reddish brown masses of semi-caustic potash, in which state it is fit for market.

In Germany, where the value of wood is greater, care is taken to select such kinds as are the richest in potash; the combustion is slower, and of course the temperature lower, in consequence of which, but little is lost by volatilization; the lixiviations also of the ashes are judiciously repeated till the alkali is extracted.

Proportion of potash afforded by 100 parts of wood of different species, which being previously dried, were burned by an open fire to ashes; and which, after being weighed, were lixiviated till all their saline contents were extracted.

	Ashes.	Salt.	Salt from 100 parts of Ashes.
Oak,	1.03	0.15	11.1
Beech,	0.58	0.12	21.9
Aspen,	1.22	0.07	6.1
Fir,	0.34	0.04	13.2

[Academy of Sciences at Paris.]

SAVOY CABBAGES.—The green curly savoy cabbage is one of the finest garden vegetables that is grown, and ought to take the place of every kind of cabbage put up for winter's use for the table. It is as hardy and as easily cultivated as any other kind of cabbage; it is much more delicate, sells more readily, and as many, indeed rather more, can be grown from a square in the garden, or from an acre of land.

An acre of land has 4310 square yards—equal to 43,560 square feet: two feet wide each way is enough to plant the savoy cabbage; thus, an acre would yield 10,890 cabbages, which require as little cultivation as potatoes, after the ground is well prepared, and the plants are planted out, and which would bring, at the moderate price of one cent apiece, the enormous sum of one hundred and eight dollars and ninety cents.

PRESERVING AND PLANTING PEACH PITS.—Seeds intended for planting should be buried in the ground immediately after the flesh is taken from them, to prevent their becoming dry, as in that case they are more sure to come up, than when they are allowed to dry and remain out of the ground until late in the fall. Whether the seeds are planted at first in the places where they are to remain, or are buried as preparatory for planting, it is important that they should be put in the ground either before they become dry, or so early in the season that they may swell again before winter, and that they should be so near the surface as to insure their being frozen, otherwise they may lie in the ground, like rose and thorn seed, one year before they will vegetate.

PRESERVING BACON.—Dr. Bartlett: There is much said about preserving Bacon. I have noticed in all the communications on the subject, that it is recommended to have the Bacon well dried; and I think this is the principal thing required. If Bacon is not well dried, there is nothing that it can be packed in, that will keep it sound. When Bacon is hung up for drying, boards or plank should be laid on the joints over it, in order to keep dirt or dust from falling on it, also to keep the smoke from escaping too soon. A smoke should be kept under it till it is thoroughly dry, and be continued in wet weather in the summer. Whoever will follow this plan will save their Bacon.—[Southern Planter.]

NATIONAL WEALTH.—Who promote national prosperity? Those who promote virtue and religion.—Who destroy it? Those who encourage the vicious, either by example or precept.

size, is one of the busiest places in the Union. The value of goods imported into this place, last season, amounted to \$150,000. The exports of lead amounted to 7 millions of lbs. at \$4 50 per cwt. There were 96 departures and 97 arrivals of steam-boats during the last season; three of which were owned by persons engaged directly in the trade. This, for a frontier town, built indifferently of frame and log houses, thrown confusedly together on the side of a hill—is certainly doing very well. People now hold their property by a somewhat precarious tenure, which prevents them from making improvements. When Government gives them title deeds to the lands they occupy, both Galena and the adjacent country will assume a very different appearance.

I took quite an extensive ride in the neighbourhood yesterday. There was to be a public meeting of the miners and other residents held about 12 or 15 miles from town, upon the subject of petitioning Congress in relation to the sale of lands; and having procured a tolerable saddle horse, I started with a gentleman, whose family name is already known among the very first in our history, and whose acknowledged talents and influence in this quarter will insure his making a figure in public life, when the new State of Wisconsin shall take her place in the confederacy.* Having, within the few years that have elapsed since, a mere youth, he left the city of New York, to try his fortunes in the West—followed at different times the various occupations of a Lawyer, a Drover, a Miner, and lastly a Smelter; besides taking an active part in two Indian wars, where his early West Point education came favorably into play, Colonel H. is, perhaps, second only to General Dodge in knowledge of frontier affairs, and popularity with the back-woodsmen in this quarter.

I cannot give you a better idea of the thoroughly Republican state of society here, than by repeating the whimsical conversation in which I first became aware of this gentleman's being a resident of these parts.

"I allow that you know Colonel H. of your city?" asked a sturdy borderer and thriving farmer of me, a few weeks since, while in the lower country.

"Colonel H. the son of General H.? certainly I do: why, what in the world brought him out here at this season. You must be mistaken, my dear sir; the duties of his office, as U. S. District Attorney, would hardly allow him to take such a tour as this."

"Tower, stranger, why, he's living among us."

"Here?"

"No, not exactly on this prairie, but in the mines. The Colonel took a drove of hogs up for me, some time since."

"My dear friend," replied I, laughing heartily at the very idea, "Colonel H. would see you to the devil first, before he'd take ten steps after a drove of hogs, for you or any one else."

"By G—d, sir," rejoined the Backwoodsman, with some excitement, "you don't know little Bill; for though he is the son of General H. and the smartest man in all these parts to boot, he has none of your d—d foolish pride about him; but would just as soon drive any honest man's hogs over the prairie as his own."

"Certainly, sir, the Colonel H. that I mean, would just as soon drive your hogs as he would his own, but I now perceive that your 'little Bill' is a very different person from the one I alluded to: yet no one could admire the independence of character you ascribe to him more than I do."

"Squire, give us your hand! you and little Bill must know each other before you leave this country."

I had an opportunity of hearing Mr. H. address a public meeting on the evening of my arrival in Galena, and was much struck with the logical precision and force with which he spoke; his fluency, clear enunciation, and thorough command of himself and his audience. His features, when animated in speaking, bore a striking resemblance to those of his great and lamented father, as exhibited in the plaster casts which are familiar to every one.

"Colonel H." said the gentleman who introduced

* A period much less remote than you would think it. The country between Rock river and the Wisconsin combines more advantages for emigration than any I have seen in my whole Western tour. That lying between the Fox river and Lake Michigan is celebrated as being equally good, and, supposing the Indian difficulties to be now forever terminated in this quarter, this region will fill with Northern emigrants, the moment it becomes known. A glance at the map will show how favorably it is situated for trade, commanding the markets alike of New York and New Orleans.

me, "is at present disguised in a suit of broad-cloth; to have him in character, sir, you should see him in his leather shirt and drawers, driving his ox team with a load of lead into town." Mr. H. laughed in reply, and our horses being ready we mounted, and soon escaping from the muddy town, found topics enough for conversation while galloping through the oak openings on the hills beyond. The gathering proved to be not so numerous, when we arrived at the place of meeting, as I had hoped; and, though in the grouping of wild looking figures with their variety of strange faces and striking costumes, Inman's bold pencil might have found some fine studies among these miners, yet I was wholly disappointed in any outlandish exhibitions of character. They were, in fact, as civil and well behaved a set as would come to the call of a committee in any of the best inhabited wards in your city. Their politeness to me indeed—being a stranger—could not be exceeded; I never approached the fire but two or three rose to offer me a seat, and scarcely one of the company called for any thing to drink, but turning round, he would add, "stranger, won't you join us?" As we spent several hours among them merely talking and moving round without getting up any formal meeting, I had ample leisure to study the different appearances of the company, as some bent over a card table, where the pieces of dirty pasteboard were rapidly compelling the small piles of money collected there, to change hands, while others lay stretched in the sun upon the wood pile before the open door, listlessly whittling a piece of stick with their long hunting knives. Among the faces and figures that particularly struck me, I remember there was one of a tall young man of about seven or eight and twenty, whose delicate features, though somewhat embrowned with toil and exposure, were only relieved from effeminacy by a dark beard trimmed around his oval face and depending from his chin, much in the style that Sir Walter Raleigh and Shakespeare are painted—either of whose fine heads, his high, pale, and expressive forehead would not have misbecome. His figure, about six feet in height, was set off by a close fitting hunting shirt of black buckskin, lightly embroidered on the collar and arms with straw-colored silk, which, from long use, had grown so dingy as scarcely to be detected upon the rusty leather it was meant to adorn. Others there were with the common cotton hunting of the west belted around them. But the majority were dressed in rough blanket coats of every possible color; while a vest of the most costly description, with pantaloons of Kentucky jean, or vice versa, would often complete their incongruous apparel.* I could form a tolerable estimate of the intelligence of this collection of people, from observing the language which my new friend used in talking to them upon the subject that brought them together; and, when speaking in earnest, it was invariably such as one educated gentleman would use to another when comparing views upon any new topic of interest.—Upon my commenting upon this, after we had bade them farewell, and were riding off together, my companion observed, that there were not only many strong-minded men of ordinary education, who had adopted the way of life which I saw prevailing around me, but that had I time to remain longer in that section of country, he could point out to me a number of regularly educated persons, the graduates of more than one of our eastern colleges, who were seeking their fortunes in this region in the capacity of common miners. While he was yet speaking, we were accosted by a poorly clad, and in every respect ordinary looking, person, to whom my companion replied with great politeness, and then resuming the subject after we had passed the forlorn shanties which the individual called his house—"par exemple," he exclaimed, "that man—and a shrewd, sensible fellow he is—was bred to the bar in your State—he looks poor enough now, it is true, but I hear that he has lately struck a lead, and a few years will probably find him in independent circumstances. We are now, you observe, among his diggings; and though, at this moment, he has hands to help him, I believe he be a man like most of us, with his single pick. Clear that trench now, and guide your horse through those pitfalls on the right, and I will take you to a point where you may see how we get up the mineral." Following my conductor along a mile or two further of pretty rough road, we came up at last to a spot

* A Backwoodsman when he lays aside his buckskins and hunting shirt, is anxious to dress in the finest broadcloth—at least I have derived that impression from what I have seen, and from being told by a merchant in extensive business in Galena, that the very best of dry goods will alone command a sale in the mines.

where a huge mound of dirt, with piles of lead ore scattered here and there on the adjacent ground, showed that a mine was very successfully worked beneath; and giving our horses to an accommodating fellow that stood by, we threw off our overcoats and prepared to descend into it. The orifice on the top of the mound over which a windlass was placed, was about three feet square, being lined with split logs crossing each other at the angles down to the original surface of the soil, below which point the adhesiveness of the earth seemed to be all that kept the sides of the pit together. It was so dark, however, at this part of the passage down that other precautions may have escaped me. Taking the rope from above in my hands, and placing my foot in a wooden hook attached to the end of it, I swung myself from the top, and in a few moments descended some 70 or 80 feet below the surface. The narrow chamber was of course excessively dark to one just coming from the light of day; and landing upon the edge of a tub immediately beneath the aperture through which I had descended, I lost my foothold and pitched head over heels in the water with which the bottom of the mine was flooded. "Any one hurt," cried a voice behind me, and looking round as I sprang to my feet I found myself in a long horizontal passage or narrow gallery with a grim looking miner approaching me with a lantern in one hand and a pickaxe in the other. The next moment the form of my companion darkened the opening above, and then, after landing by my side, he introduced me to the miner, who proceeded to show us about these subterranean premises. They consisted of three or four galleries, generally terminating in a common centre, though one or two short ones just commenced, appeared to run off at right angles to the rest, and the lead ore, which glitters like frosted silver in its native bed, appeared to lie in thick horizontal strata along their side. The masses were readily separated by the pickaxe from the neighboring clay, and we remained long enough to see several tubful hauled up by the conveyance which had admitted us into these dusky regions. The labor and exposure of these miners is very great; but the life, to those who have an interest in the work, is said to be so exciting, that I am told the most indolent man, when he has once fairly burrowed under ground, and got a scent of what is called "a Lead," will vie in devotion to his toil with the most industrious of those who labor in the light of Heaven. His stimulus indeed resembles that of the gold-hunter; for the lead, when delivered at Galena, is as good as coin in his pocket; while if he chances to strike a rich lead of mineral, he at once becomes independent, as if he does not choose to work it on his own account, there are houses in Galena which will purchase him out for a handsome sum, for the sake of speculation.

It was late in the evening, when, after taking this wide circuit, I once more regained my lodgings at Galena. I found the tavern entirely deserted, and upon inquiring the cause, and learning that there was "a play to be acted in town," I rode off at once to the door of the theatre. It proved to be in an unfinished building on the side of a hill, the basement of which entering the lower street, was fitted up as a stable, there being no flooring to the apartment above it, so that you stepped over the naked beams above the horses heads, if deviating from the plank which formed a passage way to a rude staircase leading into the histrionic realms in the uppermost story. The company consisted of four grown persons, and a child of about ten years old, and the play was the Melo-drama of The Woodman's Hut. A thing so easily turned into ridicule would be game not worth hunting down, and I mean therefore to disappoint any ill-natured expectations you may have of the picture I could give of Galena theatricals.—That the rest of the audience were at least as liberal as myself, you may gather from the fact of their showering half dollars like peas upon the stage, to express their delight of the little girls dancing, between the act, which certainly did not surpass that of the Vestris, not to mention Taglioni. In the midst of the performance of the Melo-drama, I happened to be standing in the apartment—if it may be so called, at the foot of the staircase—below, when I was not a little startled at the passage of a heavy missile by my ears, which, striking fire from a beam near to where I was standing, concluded its career by giving a hearty thump to a horse who was ruminating in his stall beneath. The mystery was presently cleared up by a little negro dropping at a bound from the entrance to the Theatrical hall above, and exclaiming, "Did you see a gun come by here, sir? The Count went to stand it in the corner and it slipped between the planks of the floor." I directed the imp to the realms below, and

starting at once for my lodgings, had no further opportunity to study these unrehearsed stage effects. The want of a regular theatre many will think a merit in so small a town as Galena; but there is another defect in the place, and, indeed, in almost all western towns where you get so far beyond the mountains that is not so easily got over, and that is, the want of female society. The number of males in proportion to females on the frontiers, is at least two to one; and girls of fifteen, (I might say twelve) or widows of fifty, are alike snatched up with avidity by the disconsolate bachelors. In the mines a few years since, their eyes were so seldom cheered with the sight of the better part of creation, that I was told by an old borderer, "he had travelled twenty miles, only to get a look at a petticoat, where it was rumored that there was actually one in the neighborhood." Even now they talk seriously in Galena of getting up an importation of ladies, for the especial amelioration and adornment of the place. How so delicate a matter is to be managed, in our fastidious age, I am unable to divine, unless, indeed, they should invite the blooming ones hither, under the ostensible purpose of getting up a fair, and then persuade them to remain and cheer these monastic abodes. I have been more than once feelingly appealed to, to make the languishing condition of these hermits of the prairies, known in more favored parts of the country; while, not wishing to betray the slenderness of my influence with the fair parties they would conciliate, I have avoided making rash promises of using my feeble offices in their favor. The only method of serving their cause I have yet hit upon is, to have inserted in the newspapers, after my arrival home, under the head of "Singular fact," "Remarkable phenomenon," "Unequalled spirit," or "Sudden disappearance," some such paragraph as this: "It is attested by credible witnesses, among whom are some of the oldest and most respectable inhabitants of Galena, that single ladies, visiting their friends in that place, never see 'a second winter.'" H.

COMPLETE WORKS OF WALTER SCOTT, VOL. VI., in seven parts. N. Y.—CONNER & COOK.—Thus far has this very cheap and well printed edition of Scott's works progressed towards its completion: the first and the last volume are now alone wanting. The materials for the first have not yet been published in England; those of the seventh and last are already on hand, and will in due course appear. We have only to commend, as in the past, the materials and typographical execution of this work.

SKETCHES, BY MRS. SIGOURNEY. Philadelphia: KEY & BIDDLE.—We took a hasty and passing notice on Saturday last, of these beautiful Sketches, hoping to-day to have more space to devote to them, but we are little better off in that particular than before. We must, however, at least enumerate the contents of the volume, and give a short extract from one of its highly-wrought tales.

The Sketches are six in number: the Father, the Legend of Oxford, the Family Portraits, Oriana, the Intemperate, and the Patriarch. Some of them, especially the Intemperate, which was published at length in this paper, may be known to our readers: yet in this permanent form, combined as they are with others now for the first time published, they will be valued, as constituting a charming volume. From *The Patriarch*, a sketch of a colony of North Carolina, remote from civilization and from the intercourse of men, where the founder and father of the colony was also its priest, we extract a passage, which, though beautiful in itself, yet is less effective thus torn from the context, than in its original connexion. It relates the death of the Patriarch. The *Lay Reader* was his eldest son.

Never will that scene be effaced from my remembrance: the expressive features, and thrilling responses, of the Patriarch, into whose expiring body the soul returned with power, that it might leave this last testimony of faith and hope to those whom he loved, are among the unfading imagery of my existence. The spirit seemed to rekindle more and more, in its last lingerings around the threshold of time. In a tone, whose clearness and emphasis surprised us, the departing saint breathed forth a blessing on those who surrounded him, in the "name of that God, whose peace passeth all understanding."

There was an interval, during which he seemed to slumber. Whispers of hope were heard around his couch, that he might awake and be refreshed.—At length, his eyes slowly unclosed. They were glazed and deeply sunken in their sockets. Their glance was long and kind upon those who hung over his pillow. His lips moved, but not audibly. Bowing my ear more closely, I found that he was speaking of Him who is the "resurrection and the life." A slight shuddering passed over his frame, and he was at rest, for ever.

A voice of weeping arose, from among the children, who had been summoned to the bed of death. Ere I had attempted consolation, the lay-reader with an unflinching tone pronounced, "the Lord gave, and the Lord hath taken away: *blessed be the name of the Lord.*"

Deep silence ensued. It seemed as if every heart was installing him who spake, in the place of the father and the governor who had departed. It was a spontaneous acknowledgment of the right of primogeniture, which no politician could condemn. He stood among them, in the simple majesty of his birth-right, a ruler and priest to guide his people in the way everlasting. It was as if the mantle of an arisen prophet had descended upon him, as if those ashen lips had broken the seal of death to utter "behold my servant whom I have chosen." Every eye fixed upon him its expression of fealty and love. Gradually the families retired to their respective habitations. Each individual paused at the pillow of the Patriarch, to take a silent farewell; and some of the little ones climbed up to kiss the marble face.

I was left alone with lay-reader, and with the dead. The enthusiasm of the scene had fled, and the feelings of a son triumphed. Past years rushed like a tide over his memory. The distant, but undimmed impressions of infancy and childhood,—the planting of that once wild waste,—the changes of those years which had sprinkled his temples with gray hairs,—all, with their sorrows and their joys, came back, associated with the lifeless image of his beloved sire. In the bitterness of bereavement, he covered his face, and wept. That iron frame which had borne the hardening of more than half a century, shook, like the breast of an infant, when it sobs out its sorrows. I waited until the first shock of grief had subsided. Then, passing my arm gently within his, I repeated, "I heard a voice from heaven saying,—Write, from henceforth, blessed are the dead, who died in the Lord." Instantly raising himself upright, he responded in a voice whose deep inflections sank into my soul, "Even so, saith the spirit, for they rest from their labors, and their works do follow them."

I remained to attend the funeral obsequies of the Patriarch. In the heart of their territory was a shady dell, sacred to the dead. It was surrounded by a neat inclosure, and planted with trees. The drooping branches of a willow, sweep the grave of the mother of the colony. Near her slumbered her youngest son. Several other mounds swelled around them, most of which, by their small size, told of the smitten flowers of infancy. To this goodly company, we bore him, who had been revered as the father and exemplar of all. With solemn steps, his descendants, two and two, followed the corpse. I heard a convulsive and suppressed breathing, among the more tender of the train; but when the burial-service commenced all was hushed. And never have I more fully realized its surpassing pathos and power, than when from the centre of that deep solitude, on the brink of that waiting grave, it poured forth its consolation.

LETTERS OF JOHN RANDOLPH to a young relative, &c. &c.; 1 vol.; Philad., CAREY, LEA & BLANCHARD.—This is a selection, as we learn from a preliminary notice, from several hundred letters written by John Randolph to a young relative, and which extend through a period from early youth to mature manhood.

They indicate very strikingly the peculiarities of the writer's character, and combine with much sagacious observation, sound maxims, and valuable counsels, a good deal that is egotistical, strange and little. The measure of indulgence, however, which the friends of that distinguished individual may be entitled to expect for him from his contemporaries and from posterity, will be judged of by the following sad note to letter CLIX:

"This letter was written during a lucid interval of alienation of mind; which, for the first time, amounted to positive delirium. Fits of caprice and petu-

lance, following days of the deepest gloom, had, for years previously, overshadowed his mind, evincing the existence of some corroding care, for which he neither sought, nor would receive any sympathy.

"For many weeks, his conduct towards myself, who was the only inmate of his household, had been marked by contumelious indignities, which it required almost heroic patience to endure, even when aided by an affectionate devotion, and an anxious wish to alleviate the agonies of such a mind in ruins. All hope of attaining this end, finally failed; and, when he found that I would no longer remain with him, the above letter was written; it is almost needless to say with what effect. I remained with him two years longer.

"The truth and beauty of the eastern allegory, of the man endowed with two souls, was never more forcibly exemplified than in his case. In his dark days, when the evil genius predominated, the austere vindictiveness of his feelings towards those that a distempered fancy depicted as enemies, or as delinquent in truth or honor, was horribly severe and remorseless.

"On the contrary, when the benevolent genius had the ascendant, no one ever knew better how to feel and express the tenderest kindness, or to evince, in countenance and manner, gentler benevolence of heart.

We fear that the disease, for such undoubtedly it became, had originally more connection with the evil passions of the heart, than would seem consistent with the "gentle benevolence" thus imputed to his happier moments. Political disappointment was not, we apprehend, without its share in inducing "the gloom" of his mind—though his aspirations in politics even, seemed always vague, desiring notoriety apparently rather than power—and therefore resenting—indifferences "of which in his later letters he more than once complains, as a personal offence."

We annex some extracts from the Letters:

"Do not undervalue the character of the real gentleman, which is the most respectable amongst men. It consists not of plate, and equipage, and rich living, any more than in the diseases which that mode of life engenders; but in truth, courtesy, bravery, generosity, and learning, which last, although not essential to it, yet does very much to adorn and illustrate the character of the true gentleman. Tommy Merton's gentlemen were no gentlemen, except in the acceptance of innkeepers, (and the great vulgar, as well as the small,) with whom he who rides in a coach and six, is three times as great a gentleman as he who drives a post chaise and pair. Lay down this as a principle, that truth is to the other virtues, what vital air is to the human system. They cannot exist at all without it; and as the body may live under diseases, if supplied with pure air for its consumption, so may the character survive many defects, where there is a rigid attachment to truth. All equivocation and subterfuge belong to falsehood, which consists, not in using false words only, but in conveying false impressions, no matter how; and if a person deceive himself, and I, by my silence, suffer him to remain in that error, I am implicated in the deception, unless he be one who has no right to rely upon me for information, and, in that case 'tis plain, I could not be instrumental in deceiving him."

"To form good habits is almost as easy to fall into bad. What is the difference between an industrious, sober man and an idle drunken one, but their respective habits? 'Tis just as easy for Mr. Harrison to be temperate and active, as 'tis for poor Knowles to be the reverse; with this great difference, that, exclusive of the effects of their respective courses of life on their respectability and fortunes, the exercises of the one are followed by health, pleasure and peace of mind, whilst those of the other engender disease, pain, and discontent, squalid misery, and the contempt of the world, contrasted with affluent plenty, a smiling family, and the esteem of all good men.—Perhaps you cannot believe that there exists a being who would hesitate which of these two lots to choose. Alas! my son, vice puts on such alluring shapes, indolence is so seducing, that (like the flies in Æsop,) we revel whilst the sun shines, and for a few hours temporary pleasure pay the price of perishing miserably in the winter of our old age. The industrious ants are wiser. By a little forbearance at the moment, by setting a just value on the future, and disregarding present temptation, they secure an honorable and comfortable asylum. All nature, my son, is a volume, speaking comfort and offering instruction to the good and wise. But 'the fool saith in his heart,

There is no God: he shuts his eyes to the great book of Nature that lies open before him. Your fate, my dear Theodorick, is in your own hands. Like Hercules, every young man has his choice between pleasure, falsely so called, and infamy, or laborious virtue and a fair fame. In old age, indeed long before, we begin to feel the folly, or wisdom, of our selection. I confidently trust that you, my son, will choose wisely. In seven years from this time, you will repent, or rejoice, at the disposition which you make of the present hour.

"ROMANCE, June 10, 1821.—"You do not overrate the solitariness of the life I lead here. It is dreary beyond conception, except by the actual sufferer. I can only acquiesce in it, as the lot in which I have been cast by the good providence of God; and endeavor to bear it, and the daily increasing infirmities, which threaten total helplessness, as well as I may. Many long weeks have passed since you heard from me. And why should I write? To say that I had made another notch in my tally?—or to enter upon the monotonous list of grievances, mental and bodily, which egotism itself could scarcely bare to relate, and none other to listen to. You say truly: 'there is no substitute' for what you name, 'that can fill the heart.' The bitter conviction has long ago rushed upon my own, and arrested its functions. Not that it is without its paroxysms, which I thank Heaven, itself, alone, is conscious of. Perhaps I am wrong to indulge in this vein; but I must write thus, or not at all. No punishment, except remorse, can exceed the misery I feel. My heart swells to bursting, at past recollections; and, as the present is without enjoyment, so is the future without hope; so far, at least, as respects this world."

"The true cure for maladies like yours, is employment. 'Be not solitary; be not idle' was all that Burton could advise. Rely upon it, life was not given us to be spent in dreams and reverie, but for active, useful exertion; exertion that turns to some account to ourselves, or to others—not laborious idleness. (I say nothing of religion, which is between the heart and its Creator.) This preaching is, I know, foolish enough; but let it pass. We have all two educations; one we have given to us—the other we give ourselves; and, after a certain time of life, when the character has taken its ply, it is idle to attempt to change it."

MONDAY MORNING, JAN. 21, 1822.—"I have just received your letter of Saturday, which I read with much pleasure; although I cannot think you are right in giving up exercise altogether. You know my opinion of female society. Without it we should degenerate into brutes. This observation applies with ten fold force to young men, and those who are in the prime of manhood. For, after a certain time of life, the literary man may make a shift (a poor one, I grant) to do without the society of ladies. To a young man nothing is so important as a spirit of devotion (next to his Creator) to some virtuous and amiable woman, whose image may occupy his heart, and guard it from the pollution which besets it on all sides. Nevertheless, I trust that your fondness for the company of ladies may not rob you of the time which ought to be devoted to reading and meditating on your profession; and, above all, that it may not acquire for you the reputation of *Dangler*—in itself bordering on the contemptible, and seriously detrimental to your professional character. A cautious old squareroes, who might have no objection to employing such a one at the bar, would, perhaps, be shy of introducing him as a practitioner in his family, in case he should have a pretty daughter, or niece, or sister; although all experience shows that, of all male animals, the *Dangler* is the most harmless to the ladies, who quickly learn, with the intuitive sagacity of the sex, to make a convenience of him, while he serves for a butt, also.

"Rely upon it, that to love a woman as 'a mistress,' although a delicious delirium, an intoxication far surpassing that of Champagne, is altogether an essential, nay, *pernicious*, in the choice of a wife; which a man ought to set about in his sober senses—choosing her, as Mrs. Primrose did her wedding-gown, for qualities that 'wear well.' I am well persuaded, that few love-matches are happy ones.—One thing at least, is true, that if matrimony has its cares, celibacy has no pleasures. A Newton, or a mere scholar, may find employment in study; a man of literary taste can receive in books a powerful auxiliary; but a man must have a bosom friend, and children around him, to cherish and support the dreariness of old age. Do you remember A. V.? He could neither read nor think; any wife, even a scolding one, would have been a blessing to that poor man. After all, 'suitability' is the true foundation for marriage. If the parties be suited to one

another, in age, situation in life, (a man indeed, may descend, where all else is fitting,) temper, and constitution, these are the ingredients of a happy marriage—or, at least, a convenient one—which is all that people of experience expect."

LA REVUE FRANCAISE; New York, *Hoskin & Snowden*.—This monthly periodical, now entering upon its second volume, has been united with, or rather has absorbed, the *Bibliothèque Choix de littérature française*, published by Carey & Lea, of Philadelphia—whence its chances of, and claims to, permanent success, are considerably increased. The present number contains much interesting matter, not the least attractive part of which is the article on "*Chateaubriand's Memoirs*."

LA FRANCE LITERAIRE, N. Y.—This, as our readers know, is a semi-monthly periodical, affording at an unusually cheap rate, a great variety of extracts from the current French literature.

Te students of French, both the works here noticed offer, as it seems to us, cheaper and more attractive—because more varied—"school books," than the everlasting *Telemaque*, or *Gil Blas*.

RECOLLECTIONS OF A NAVAL LIFE, by CAPT. SCOTT.—This is the title of a work recently published in London, which adds another to the revolting libels upon this country emanating from the British press, and bearing the names of men whose profession—that of arms—has heretofore been thought to imply the possession of courtesy and honor, even where brains were lacking.

In three successive numbers of the London Literary Gazette, we find extracts from this work, referring chiefly to the capture of Washington, and the attack on Baltimore—at both which the author was present—the whole aim and scope of which seems to be, to represent the freebooter Cockburn, as a *peaux Chevalier*, and the Americans, one and all, as cowards and liars.

We will at another time give some specimens of this precious work.

NEW MUSIC.—The only novelty is "Hail Columbia," arranged as "a brilliant Fantasia" for the piano, by Wm. A. King, and published by Firth & Hall, Franklin Square.

SUMMARY.

[From the National Gazette—communication from an authentic source.]

We are extremely gratified to learn, that the unfavorable statements made in several of the newspapers, regarding the health of the venerable ex-President Madison, are somewhat exaggerated. He does not appear to be in immediate danger, although he is extremely feeble, and laboring under disease of a somewhat complicated character, which prevents him from indulging in the active intellectual and corporeal efforts, to which he has been, through a long life, accustomed. On this account, it has been enjoined on him not to harass himself by inordinate attention to the numerous questions of interest incessantly propounded to him, regarding the constitutional history of the country, or which refer to the various absorbing scenes of which he has formed so important a part, and on many of which his voice is esteemed oracular. At the advanced age of eighty-three, and upwards, and afflicted with rheumatism in his hands, it need scarcely be said that the exertion demanded in replying to such inquiries must be irksome, even as respects the mere manual part, yet many questions require answers, which, if complete, would extend to volumes. For all this kind of labor his feeble frame is inadequate, and when the fact is once known, it will, doubtless, be no longer expected of him. Every patriot and philanthropist burns with a glow of veneration towards this illustrious benefactor of his country and his race, and will pause before he requests of him any exertion of mind or body, which may tend, even in the most remote degree, to curtail the existence, or diminish the comforts of one whose whole life has been so ardently devoted to the good of humanity.

The Board of Brokers on Friday, voted a donation of one hundred dollars to the Colonization Society, to be expended in the colonial supplies to be shipped by the *Jupiter*.

NAVAL.—The United States frigate *Potomac*, J. Downes, Esq. Commander, arrived in Boston on Friday, from the East Indies, after an absence of two years and a half.

The cruise of the *Potomac* has been an extensive one. She was originally intended to relieve the *Guerriere* in the Pacific; but her destination, on the eve of sailing, was so far altered, by the Department, as to direct her to take an easterly route, by the way of the Cape of Good Hope and the Sunda Isles, and China, and after performing special duties assigned her in that quarter, to repair to her station in the Pacific. She has completed a circumnavigation of the Globe, and run, by log, more than sixty-one thousand miles, and been five hundred and fourteen days at sea. During this long period, she has never had a spar carried away, nor a man seriously injured by casualty on board, nor have all hands been called at night, but in one instance.

No one of our public vessels since the last war, has performed a cruise so varied, so extensive, and in many respects so interesting, as the one performed by the *Potomac*.

The *Potomac* left at Rio Janeiro, U. S. sloops of war *Peacock*, Capt. Geissinger, for the United States April 17; *Natchez*, Capt. Zantlinger, and *schr. Boxer*, Capt. Farraght. Hon. E. A. Brown, our Chargé d'Affaires to Brazil, contemplated returning to the United States in the *Peacock*.

The sloop of war *Ontario*, Capt. Salter, was at Buenos Ayres at last dates. The sloop of war *Fairfield*, Capt. Valletté, and schooner *Dolphin*, Lieut. Com. Voorhees, were cruising at last accounts to Lima; the former had been as far as Guayaquil.

The *Potomac* sailed from New York on the 24th of August, 1831, and has therefore been absent two years and nine months. During her cruise she has crossed the Equator six times, and encountered dangers in navigation, unknown in ordinary voyages.—The men have been exposed to disease and pestilence in the most insalubrious regions of the earth; and shared also the risks of war in the assault and capture of the Malay forts. Yet the degree of mortality has been even less than usual on board vessels of war, only twenty-seven having died, (including those killed in battle at Qualla Battoo) out of about 500 souls on board.

OFFICERS OF THE POTOMAC.

Commodore John Downes, Commander; Irvine Shubrick, 1st Lieut.; Stephen B. Wilson, 2d do.; Henry Hoff, 3d do.; Jonathan Ingersoll, 4th do.; Matthew F. Maury, 5th acting do.; Sylvanus Gordon, 6th acting do.; Alvin Edson, 1st Lieut. Marines; George H. Terrott, 2d do.; Samuel Jackson, Fleet Surg.; J. N. Reynolds, Esq., Com. Secretary; Philo White, Purser; John W. Gries, Chaplain; Robert S. Fatem, Sailing Master; M. G. L. Clairborne, Acting do.; Jonathan M. Foltz, Henry D. W. Paulding, Assistant Surgeons; Francis Warrenner, Schoolmaster; David Telfair, Commodore's Clerk; Charles de Selding, Richard Jones, Master's Mates; Henry C. Hart, Wm. H. Pendleton, Levi Lincoln, Jr. John W. Taylor, George T. Sinclair, James B. Lewis, Alonzo B. Davis, Francis P. Hoban, Charles W. Morris, Wm. May, James G. Stanley, Charles Hunter, George M. Totten, Theodore B. Barrett, Eugene Bogle, Wm. B. Whiting, Wm. T. Cooke, and Wm. M. E. Adams, Midshipmen; John McNelly, Boatwain; John R. Covington, Gunner; Wm. E. Sheffield, Carpenter; Christian Nelson, Sail Maker.

Passengers, Lieut. N. C. Lawrence and Mid'n V. L. Williamson, late of U. S. ship *Fairfield*; Assistant Surgeon Cornelius Moore, Midshipman Wm. P. Taylor, and Charles Douglerly, Gunner, late of U. S. schooner *Dolphin*; Mr. Philo White, late Navy Agent at Valparaiso. [Purser Wm. A. Slacum remains at Valparaiso, in charge of the Navy Agency.]

The United States ship *Peacock*, David Geissenger, Esq. Commander, arrived in this port on Sunday, from a cruise in India, and last from Rio Janeiro.—E. A. Brown our Chargé d'Affaires at Brazil, came passenger in the *Peacock*. We annex a list of her officers, and from the Boston papers take a notice of those of the *Potomac*, and some particulars of her cruise.

Officers of the *Peacock*.—David Geissenger, Commander; Robert B. Cunningham, H. Y. Furviance, Edward B. Boutwell, Thomas W. Brent, Lieutenants; Francis B. Stockton, Purser; Benajah Ticknor, Fleet Surgeon; George Hurst, Sailing Master; Augustus S. Baldwin, George R. Carroll, Charles Thomas, William Reynolds, D. R. Crawford, H. T. Wingate, John B. Weed, A. H. Wells, Robert Patton, Midshipmen; H. M. Fowler, Lieut. of Marines;

H. N. Robinson, Schoolmaster; Frederick T. Poor, Captain's Clerk; John Barr, Acting Gunner; William Condy, Acting Carpenter; Charles H. Haven, Purser's Steward.

OFFICIAL—NAVY DEPARTMENT.

Extract from a letter addressed to the Secretary of the Navy from John A. Kearney, Surgeon of the West India Squadron, dated on board the *Vandalia*, Pensacola, May 8, 1834.

"I have been eight months Surgeon of this fleet, and have not lost a man, a circumstance rare in these tropics, and attributable, no doubt, to the excellent police and subordination, so strictly and judiciously enforced."

An Oration in honor of Mr. WIRT, was delivered in Baltimore on Tuesday. The Baltimore American thus speaks of it:

There is but one opinion, among the crowded audience that listened to Mr. Kennedy's Oration on the death and character of Mr. Wirt, delivered in the Rev. Mr. Nevin's church on Tuesday evening, at the request of the Baltimore Bar. It was highly polished, eloquent and affecting—all that was anticipated from the accomplished speaker, and the elevating theme. The spacious building was filled, and as the orator spoke with just praise and merited affection of the genius and virtues of the illustrious dead, dwelling upon his labors, tracing his career, and unfolding the history of his mind, the graces of his life, and the moral beauty of his character—he was heard with profound and delighted attention.

We learn that the Locomotive Engine on the New-Castle and French Town Rail Road, on Friday, when on her way about seven miles from French Town, broke some of her machinery, but we believe no injury was sustained by the passengers. In consequence of the accident, the line did not arrive in Philadelphia until near four o'clock.—[Philadelphia paper.]

[From the Cincinnati Mirror.]

THE FIRST FLAT BOAT ON THE MISSISSIPPI.—A friend called on us a few mornings since to accompany him to the shop of Mr. F. Shields, for the purpose of viewing an iron tablet, recently cast by Hanks & Niles, of this city. It is to be erected to the memory of one of the pioneers of the West, and we should judge that it will perpetuate his name through many ages. It is very spacious, with large and deeply indented letters, and is the first of the kind ever executed west of the Alleghanies.

The following is the inscription:

JACOB YODER,

Was born in Reading, Pennsylvania,
August 11th, 1758.

And was a Soldier in the Revolutionary Army in
1777 and 1778.

He emigrated to the West in 1780, and in May,
1782, from Fort Redstone, on the
Monongahela River,

in the

FIRST FLAT BOAT

that ever descended the Mississippi,
He landed at New Orleans with a cargo of
produce.

He died April 7, 1832, at his Farm in Spencer
County, Kentucky, and lies here
interred beneath this tablet.

Capt. Jacob Yoder was a highly respectable and wealthy farmer of Spencer county, Ky. To him belongs the honor of having descended the Mississippi in the first flat boat. And if no other powers than those of time, and wind, and storm shall assail it, this tablet will preserve the fact recorded upon it thro' a long series of coming ages.

No one who has any pretensions to the possession of a soul can contemplate this tablet without a variety of emotions. A brilliant series of associations enchain the mind of the gazer, as with a spell, to it.—That the man who navigated the first flat boat that ever descended the Mississippi, should have lived to see a magnificent steamboat ploughing the same watery track, is a truth which affords a subject of much admiration. When he launched his little bark on the Monongahela, what were his anticipations? Such as time has proved? No, he then thought of the wily savage, whose covert was a wide and untrodden wilderness. He proceeded on his precarious voyage. Instead of cheering aspects of busy cities, flourishing villages, and cultivated farms, which now chain the voyager's attention, he saw a range of hills, unshorn of their primeval wilderness, whence the lugubrious howl of the wolf proceeded, the vast wilderness where the foot of civilized man had not trodden, "instinct," 'tis true, "with life," but it was the life of the forest denizen, the trembling fawn, and the myriad songsters of the wild. He reached his destination, but his safety was a marvel to him-

self, and his dangers in after recital, wakened up a fear stricken excitement in the minds of those who listened to his tale of perils "by field and flood."—He lived to see the country change masters, the wilderness blossom as the rose, and human energy achieve a conquest over a thousand obstacles. This is the greatest triumph that man has yet achieved.—History records no parallel. To the future generations of America, it will be what the fabulous age of the Titans was to the ancient Greeks.

The manner of men's dying has often been commented upon, as indicative of individual character under circumstances where dissimulation can no longer avail. The indication is not good for much in our judgment, for there is very frequently as much study of effect, and "hollow show," in the last moments of life, as at any other period of it.

The following extracts from volume II. of a curious and clever book, called *the Doctor*, lately published in England, have some bearing on this point.

[From the Doctor.]

"It is one thing to jest, it is another to be mirthful,—Sir Thomas More jested as he ascended the scaffold. In cases of violent death, and especially upon an unjust sentence, this is not surprising; because the sufferer has not been weakened by a wasting malady, and is in a high state of mental excitement and exertion. But even when dissolution comes in the course of nature, there are instances of men who have died with a jest upon their lips. Garci Sanchez de Badajez, when he was on the point of death, desired that he might be dressed in the habit of St. Francis; this was accordingly done, and over the Franciscan frock they put on the habit of Santiago, for he was a knight of that order. It was a point of devotion with him to wear the one dress, a point of honor to wear the other; but looking at himself in this double attire, he said to those who surrounded his death-bed, 'The Lord will say to me presently, "My friend Garci Sanchez, you come very well wrapt up!" (may arropado) and I shall reply, "Lord, it is no wonder, for it was winter when I set off."'

"The author who relates this anecdote remarks that 'o morrer com gracia he muyto bom, e com gracia he muyto mau:' the observation is good, but untranslatable, because it plays upon the word which means grace as well as wit. The anecdote itself is an example of the ruling humor "strong in death;" perhaps also of that pride or vanity, call it which we will, which so often, when mind and body have not yielded to natural decay, or been broken down by suffering, clings to the last in those whom it has strongly possessed.

"Don Rodrigo Calderon, whose fall and exemplary contrition served as a favorite topic for the poets of his day, wore a Franciscan habit at his execution, as an outward and visible sign of penitence and humiliation: as he ascended the scaffold, he lifted the skirts of the habit with such an air that his attendant confessor thought it necessary to reprove him for such an instance of ill-timed regard to his appearance. Don Rodrigo excused himself by saying that he had all his life carried himself gracefully! The author by whom this is related calls it an instance of illustrious hypocrisy. In my judgment the father confessor who gave occasion for it deserves a censure far more than the penitent sufferer. The movement, beyond all doubt, was purely habitual,—as much so as the act of lifting his feet to ascend the steps of the scaffold; but the undeserved reproof made him feel how curiously whatever he did was remarked: and that consciousness reminded him that he had a part to support, when his whole thoughts would otherwise have been far differently directed.

"A personage in one of Webster's plays says:

"I knew a man that was to lose his head
Feed with an excellent good appetite
To strengthen his heart, scarce half an hour before,
And if he did, it only was to speak."

Anecdote.—In a friend's album, Mr. Smith, keeper of the prints in the British Museum, wrote a playful account of himself, in which is the following paragraph:—"I can boast of seven events, some of which great men might be proud of—I received a kiss when a boy from the beautiful Mrs. Robinson; was patted on the head by Dr. Johnson; have frequently held Sir Joshua Reynolds' spectacles; partook of a pot of porter with an elephant; saved Lady Hamilton from falling when the melancholy news reached her of Lord Nelson's death; three times conversed with King George the Third, and was once shut up in a room with Mr. Kean's lion.—[London Paper.]

The schooner *Mexico*, commanded by Capt. James Almeida, and engaged in the Mexican trade, which disappeared so mysteriously some months since, is thus accounted for by a New Orleans paper: The captain and cabin passengers of that vessel were murdered by three Italians who were on board, and she was afterwards scuttled and abandoned by them somewhere on the Spanish Main.

City of Brooklyn.—The Common Council met on Tuesday, 20th, and elected George Hall, Esq. Mayor, and Cyrus P. Smith, Counsellor and Clerk. The oath of office was administered to the Mayor elect by Judge Morse. The Mayor then addressed the Board in a short speech, in which he congratulated them and his fellow citizens on the successful issue of their application for a city charter; and the more so, as it has been a struggle against the combined and uniring opposition of a portion of their own county, and the great and influential city of New York. But while we rejoice, gentlemen, (said he,) that the legislative wisdom of our State has indignantly frowned down the narrow minded policy which has been arrayed against us by our sister city, and by an almost unanimous vote, secured to us those rights and privileges which our position, our population and wealth had a right to demand; let us not be unmindful of the additional obligations it imposes on every good citizen, and especially upon us, their representatives, to proceed with caution and prudence, in the discharge of the various duties committed to our trust.—[Commercial.]

[From the Keene N. H. Sentinel of May 22.]

The snow storm of Thursday last (15th May!) was very severe on the high lands in this vicinity, the snow drifting as in February. We learn that west of the mountains the snow was a foot deep, and that two of the stages from Middlebury went out on runners. At Haverhill, N. H. the snow fell nearly two feet on a level.

The Rutland Herald says the storm raged with fury from 8 o'clock Wednesday evening, to Thursday afternoon. The snow fell twelve inches. "On Friday, when the sun came to shed its beaming rays on the foliage, it was enough to make a sensitive heart sick at the prospect. All the beauty of Spring had vanished, and every green thing bore the marks of desolation—it looked like the 'gloom of Autumn.'"

GREAT RISE IN THE ALABAMA RIVER.—The Mobile Register of the 8th, states, on information received from passengers by the steamboat Choctaw, from Tuscaloosa, arrived the evening before, that the River at Lempolis had risen twenty-five feet, within a few days, and that it was rising when the boat left that place. Serious apprehensions were entertained for the Cotton and Corn planted on the bottom lands.

All the contents of the number for next month, of the American Quarterly Review, are printed, and the number will be issued without delay. The titles of the several articles are,—Art. 1. Washington and his Writings. 2. Life of Alexander Hamilton. 3. Italian Tragedy. 4. Cox on Quakerism. 5. Life and Writings of Robert C. Sands. 6. Black Hawk. 7. Decline of Poetry. 8. Paris and the Anniversary. 9. The Public Distress.

Colony of Pigeons.—A Susquehanna Pa. Co. paper mentions that immense numbers of Pigeons have taken possession of, and appropriated to their use, a territory said to be nine miles in length, and two miles in width; every foot of which, and almost every tree and branch of a tree upon it, are constantly occupied by them. It is presumable that the beech woods are indebted for this Pigeon visit, to the abundant crop of beech nuts this season.

Appointment.—We understand, says the Commercial, that Eli Moore, of this city, has been appointed by Gov. Marcy, to inspect and make a report to the Executive of the State, of the different prisons, at a per diem allowance of five dollars, and travelling expenses.

DEPARTURE OF MISSIONARIES.—The ship Corvo sailed on Wednesday, from Boston, for Bombay, having on board the Rev. Messrs. Graves and Munger, and Messrs. Hubbard and Abbott, and their wives, and also Miss Graves and Miss Kimball, all destined to the Mahratta Mission. Many persons assembled on the wharf to witness the impressive ceremony of embarkation.

Mr. MADISON.—It will be gratifying to our readers to learn that Professor *Dunglison*, on his return through Washington on Thursday from Montpelier, the seat of Mr. Madison, reported him to be in a rapid state of recovery.

NEW MANUFACTURE.—We have before us two ladies hats called the "White Aspen," and they are very pretty light summer hats, as one would wish to see. The one is plain: the other an open diamond figure; and either is fit to grace the head of beauty. These new articles may be had of Wm. P. Sloan, 29 Stone Street.

BOSTON, May 21.—*The Hardest fend off*.—The ship *Neponset* was yesterday hauled upon the railway, and her cut water exhibits the effects of the tremendous power of the stroke of a whale. Capt. Hunt informs us that on his passage out to Canton on the 19th of last July, when sixty days from Boston, a sudden shock was felt by all on board, and that those who did not see the whale, supposed the vessel had struck a rock. It was in broad day, and the mate, who was steering at the time, saw the whale, and might have avoided it as well as not, but thinking to have a little sport, and not being apprehensive that there could be the least danger in giving him a gentle touch, kept straight on; he soon found out his mistake however, and came off second best, for the whale on being disturbed, gave a sudden turn, bringing his tail directly across the bows of the ship, carrying away a part of the cut-water, a piece of solid timber eight feet long and nearly a foot thick, breaking off a number of copper bolts as short and with as much ease as if they had been pipe stems, and doing some other considerable damage. It was a large right whale, and in all probability if he had got a fair lick, as the boys say, for this was nothing but a gentle touch, he would have sent the vessel to the bottom. Capt. Hunt was obliged to repair as well as he could in Canton, and now the ship is on the rail-way, the effects of the encounter are plainly to be seen.

[From the *Western Carolinian* of May 17.]

HARD TIMES.—Corn is now worth one dollar per bushel in this place, and hard to get at that. It has never, but once, within our memory, been so high here. In 1817 it sold, we believe, as high as \$1.25—but that was hardly as high as 50 cents now, if we take into consideration the redundancy of the circulating medium then, and its extreme scarcity at the present time. Many poor families are in a state of actual suffering, for they have not the "ways and means" of going any distance in search of grain; and those farmers in the country, who had it to spare, have already disposed of their surplus.

It is said that Corn may be had, as yet, in abundance, up the Yadkin. Those who have spare capital, would act, if not prudently, at least generously, by contributing something to collect a supply at this place to be distributed to the poor on such terms as would tend to alleviate distress without encouraging idleness.

The privilege of filling up Coffee House Slip and Old Slip, has been sold for two thousand seven hundred dollars, and the privilege of dumping dirt into them is retailed by the contractor at three cents a load. This at first seems more strange, than that servants should hire the privilege of tending in hotels. But when it is considered how great the quantity of dirt and rubbish is which must be taken away from the buildings which are pulling down, and the cellars which are digging in the lower part of the city, and that there is no other place of deposit for it within the distance of nearly two miles, the thing is accounted for.—[*Jour. of Com.*]

Accident.—The sloop *Rising Sun*, Capt. Bull, of Barnegat, whilst proceeding down the bay in a squall on Saturday afternoon, was struck by a heavy flaw of wind and capsized. Two of the hands were drowned. One of them was in the cabin at the time of the accident, and the Captain hoping to save his life, procured as soon as possible, an axe from a schooner hard by, with which he cut a hole into the cabin, but as soon as the air was admitted the sloop righted, and the poor fellow was irrecoverably lost. The sloop soon after drifted ashore on Robin's Reef, and on Sunday morning, when the Captain boarded her, he found that some rascals had in the night completely stripped her of rigging, blocks, &c.

HUDSON, COLUMBIA COUNTY, MAY 27.—The barque *Washington*, Captain Clark, left our docks on Tuesday afternoon last for the Pacific, in pursuit of the sperm whale. She was manned and furnished for

three years. She sails on her second voyage. Our citizens have now eleven vessels in quest of the oily treasures in the prolific deep.

Criminal Outrage.—The church, called St. Matthews, in Manchester village, on the west side of the Schuylkill, near this city, was entirely destroyed by fire on Saturday evening. There is not the slightest doubt that this conflagration was the work of an incendiary. There had been no fire in or near the building, for a long time.—[*Philadelphia Commercial Intelligencer.*]

The bill concerning gold and silver coins of the United States, and for regulating the value of foreign coins, passed the House of Representatives on Tuesday. The Senate will undoubtedly—supposing the provisions of the bill to be satisfactory, (of which, not having seen it, we have no means of judging)—speedily adopt it.

[From the *Arkansas Gazette*, April 30.]

CHOLERA.—LITTLE ROCK.—Among the passengers who passed up on the steamboat *Gallipolis*, on Friday night last, were Lieuts. Chandler and Taylor, U. S. A., having in charge about 140 recruits for the 7th U. S. Infantry, at Fort Gibson, which have been recently enlisted in New York and other eastern ports. These recruits, we are sorry to say, were in a distressing situation when they passed here, the Cholera having made its appearance among them, and bidding fair to thin their ranks considerably. Six had died since they had left New Orleans—two on the day they arrived here, and upwards of 40 new cases reported same day.

The *Helena Herald*, of 24th instant, states that the steamboat *Warren* passed there on the 22d, bound up, having lost 10 or 12 passengers by cholera, between New Orleans and that place—one of which was Mr. B. Stowell, of Natchez.

The Cholera was still prevailing, with little or no abatement, among the Cherokee emigrants, encamped near the mouth of the Cadron, when we last heard from them. The number of deaths in the party, from all diseases, since they left Waterloc, on the Tennessee river, amounts to about 60—a fearful mortality in a party originally not exceeding 550 souls, in the short space of about two months. Every humane exertion within the control of Lieut. Harris, the conducting agent, has been used to alleviate the sufferings of the emigrants. One of the physicians, Dr. J. C. Roberts, employed by him to attend on the sick, was attacked by the disease, and died on Tuesday last; and Dr. John T. Fulton, the only other attending physician, was also seized with it last week, but, we are happy to learn, was convalescent and out of danger on Friday evening last. Another has since been employed from this county, who, we hope, may be more fortunate.

The disease also appears to be spreading along the river. A citizen of this county, Mr. Madison Taylor, died last week, about 15 or 20 miles above this place, and there was said to have been another in his family and one in the vicinity, both of which are convalescent. There have been several cases of the cholera at or near Pine Bluff, within the last ten or fifteen days, and three or four blacks have died; but the disease had abated when the last steamboats left there.

For the information of our friends abroad, we have the pleasure of assuring them, that we have no case of the Cholera in town, nor in the vicinity, and that our citizens are as healthy as usual at this season of the year.

The Park.—The Corporation, some months since with a view to adorn this beautiful promenade, and to protect the areas from being invaded and trampled upon, made an appropriation for the purpose of purchasing handsomely turned Locust Posts and chains to enclose all the areas in a substantial manner.—The work and the materials were let out on contract to a gentleman who sent over a sample of the kind of chain required to England, and ordered enough to complete the enclosure of all the areas. They arrived a few days since, and a number have been passed through the turned posts, and present a rough, weak, and miserably insufficient appearance for the purpose intended. Some of them have since been broken and others will doubtless soon be broken by the boys and others resting on them, and the post holes will soon become so large as to let the chains down almost to the earth. The whole job, in short is most miserable executed. The reason for sending to England, the contractor says, is because he could, and did purchase these chains at 13 1/2 cents per pound, whereas when made in this country twice as good, they would cost 16 cents a pound and em-

ploy American mechanics. This is favoring American industry with a vengeance and exhibits a disposition to disregard public feeling, which should meet with popular disapprobation.—[*Daily Advertiser.*]

STEAMBOAT UNITED STATES.—This splendid [Boat proved herself an excellent sea vessel, by riding out in safety the tremendous gale that wrecked the Steamboat *Oswego*. Though encountering the full force of that storm, she was perfectly manageable, so much so that the passengers felt entirely safe. On her last trip down the Lake, she run from Niagara to Ogdensburg, (325 miles) including the usual stoppages at seven different ports, in thirty-five and a half hours. The last thirty-six miles was accomplished in two hours and forty-nine minutes. The Ogdensburg paper speaks in high terms of her popular Commander, Capt. R. J. Van Dewater.

P. S.—The United States will hereafter leave Ogdensburg at 9 o'clock, A. M. on Sundays, instead of 5 o'clock, P. M.—[*Alb. Even. Jour.*]

[The previous day's proceedings will be found in the *Extra.*]

A Novel Law Point.—The Supreme Court of Massachusetts, at its law session in Boston in March last, decided, that a grand-child born eight months and a half after the death of his grand-father, is included in a bequest to grand-children "living at his decease."

The London Weekly Despatch, in declining to publish a "Subaltern's Eulogy on a great Captain," takes occasion to remark, that they have but little respect for heroes, in the common acceptance of the term, but there have been great leaders, whose memory will be ever dear to freemen—such were,

"Leonidas and Washington,
Whose every battle-field is holy ground,
Which breathes of nations saved—not worlds undone.
How sweetly on the ear such echoes sound!
While the mere victors may appeal, or stun
The servile or the vain: such names will be
A watchword, till the future shall be free!"

[From the *Journal of Commerce.*]

LATEST FROM RIO JANEIRO.—By a decree of March 6th, government has granted to a company called "Nitheroy," the exclusive privilege, for ten years, of navigating the rivers and bays of the Province of Rio Janeiro by Steam. The Company, on their part, agree to establish steamboats on said bays and rivers, within 15 months from the date of the decree, under penalty of two contos of reis, to be paid to the public Treasury.

The Minister of the Home Department has addressed Circulars to the Presidents of several Provinces, stating that the government had received information of the existence of the Silk-Worm in those Provinces, and requiring them to investigate the matter, and "remit to the Secretary of State's a portion of balls of silk as made by the insect, if such are to be found," and also "every possible information as to where they are to be found, the shrubs or trees on which they feed, and whether they can be propagated with facility in houses." The Silk-Worm of Brazil is not exactly of the same species with that of Asia, being larger and of a more hardy nature. The Silk is said to be of an excellent quality.

Jose Aronche de Toledo Rondon has been commissioned by the government to write a treatise upon the process of manufacturing Tea. It appears that this plant has been propagated to some extent in the Provinces of St. Paul's Nines, &c. and that it flourishes extremely well. It was introduced into St. Paul's by the gentleman above named, whose plantation in 1829 contained upwards of 30,000 plants.

RIO JANEIRO, April 5th.—The horizon of our political world bears a more favorable aspect than it has done for some time past; the reports from the Presidents of the different Provinces to the Regency, and the numerous felicitations received from the several municipalities, all announce that tranquility is firmly restored in all the Provinces, except that the insurrection of Panellas and Jaquipe has not yet been quelled; but as troops from all directions have marched against the insurgents, they cannot stand out long; several persons implicated have been taken and sent to the Island of Fernando Noronha.

The long continuance of dry weather has much injured the crops in the Minas districts generally, and reduced the towns of Diamantina and Principe to absolute starvation; happily the rains which have lately fallen, and the liberal subscription made by the inhabitants of this city, both natives and foreigners, whose names have been published, amounting to near Rs. 30,000,000, and measures adopted by government, have greatly relieved the unfortunate sufferers.

[From the Journal of Commerce.]

A NEW CONTINENT.—It will be recollected that a year or two ago, a paragraph was put forth by the London Literary Gazette, if we recollect right, and extensively copied, stating that a large body of land had been discovered somewhere to the Southward of the Cape of Good Hope. There was however a great lack of details, for want of which, as well as the extraordinary character of the discovery, many were inclined to regard it with incredulity. We now have the long sought details.

INTERESTING TO THE WORLD AT LARGE.

[From the Tasmanian of Hobart Town, dated October 11, 1833.]

Most of our readers will recollect that about 18 months since, Capt. Briscoe, of the brig Tula, brought his vessel to this port for repairs. It will also be fresh in the memory of many, that some of our public writers pretended to doubt the authenticity of Capt. Briscoe's statement—viz., that he was then on an expedition, at the cost of a London mercantile house; indeed, in this very journal, the epithet "piratical" was more than once repeated when referring to the Tula and Lively. At the time Captain Briscoe was with us, it became pretty generally understood that a discovery of land of some importance had been made, but as great pains were taken to keep the situation a secret, the various reports circulated, of course, were only surmises of those who pretended to be more knowing than their neighbors. The following extract, however, will disclose the secret, which was so well kept by the enterprising crews of the two little vessels.

"The discovery of the land towards the South Pole, made by Captain Briscoe, in the brig Tula, accompanied by the cutter Lively, both vessels belonging to Messrs. Enderby, extensive owners of ships in the whale fishing, has been communicated to the Royal Geographical Society.

"It is supposed that this land forms a part of a vast Continent, extending from about longitude 47—31 east, to longitude 69—29 west, or from the longitude of Madagascar round the whole of the Southern or South Pacific Ocean, as far as the longitude of Cape Horn. On the 28th February, 1832, Captain Briscoe discovered land, and during the following month remained in the vicinity; he clearly discovered the black peaks of mountains above the snow, but he was, from the state of the weather, and the ice, unable to approach nearer than about 30 miles. The Stormy Petros was the only bird seen, and no fish. It has been named Enderby's Land, longitude 47 31 E. latitude 66—36 S. An extent of about 300 miles was seen. The range of mountains E. S. E.

"In consequence of the bad state of the health of the crew, Capt. Briscoe was compelled to return into warmer latitudes. He wintered at Van Diemen's Land, and was rejoined by the cutter, from which he was separated by the stormy weather, in the high south latitudes.

"In October, 1831, he proceeded to New Zealand. In the beginning of February, 1832, he was in the immediate neighborhood of an immense iceberg, when it fell to pieces, accompanied by a tremendous noise.

"On the 4th of the same month, land was seen to the S. E. longitude 69—29, latitude 67—15. It was found to be an island, near to the head land, of what may be hereafter called the Southern continent. On the island, about four miles from the shore, was a high peak (and some smaller ones,) about one third of its height was covered with a thin scattering of snow, and two thirds completely with snow and ice. The appearance of the peaks was peculiar; the shape was conical, but with a broad base.

"This island has been named Adelaide Island, in honor of her Majesty. Mountains were seen to the South at a great distance inland, supposed about 90 miles. On 21st February, 1832, Captain Briscoe landed in a spacious Bay on the main land, and took possession in the name of his Majesty William IV. The appearance was one of utter desolation, there being no vestige whatever of animal or vegetable life. In future, this part of the continent, if such it prove, will be known as Graham's Land."—[Sydney Monitor.]

FOREIGN ITEMS.

The Prince de Ligne, the Duke d'Ursel, and others whose houses were sacked by the Brussels mob, had arrived at Paris.

M. Barbé Marbois, at the age of 90, retires from the Presidency of the *Cour des Comptes*, and is succeeded by M. Barthe, created for that purpose a Peer of France.

Mr. Livingston, our Minister to Paris, had interviews with the King on the 3d and 5th ult., both after the rejection of the indemnity.

FRENCH TREATY.—The following article from the National Gazette, shews that we have no reason to expect any reconsideration of the vote in the French Chamber of Deputies, rejecting the American indemnity—no such usage existing in that body. At the next session, we entertain little doubt of a different result.

A French friend has sent us the following note, which possesses interest in regard to the fate of the Treaty with France:

"The answer to your inquiries about the reconsideration of votes, is more easy than I at first supposed. Annexed, you have the text of two articles of the Charter, as revised in 1830, after the Revolution.

"Art. 15. The right of proposing laws belongs to the King, to the Chamber of Deputies, and to the Chamber of Peers. However, all revenue laws must be voted first by the Chamber of Deputies."

"Art. 17. If a proposition of a Law has been rejected by one of the three branches, it cannot be brought up again (représenté) during the same session."

"As for what is called reconsideration of a vote, that is, voting again in the same session, upon a question decided when the proper number of Deputies (the Quorum) has been present at the vote, it is altogether unknown in our legislative assemblies, at least since the famous Convention, who never having consulted anything but their arbitrary and despotic will, often treated their own decrees as they had dealt with most of the sacred laws of humanity."

Population of Great Britain.—There has just been printed in two volumes folio, an "Enumeration Abstract" of the population of Great Britain for 1831, made from the returns and answers forwarded from each parish in England and Scotland, pursuant to an act of Parliament.

Population of England and Wales, from the year 1700 to the year 1830, including the army and navy, and merchant seamen.

1700—5,134,516	1750—6,039,648	1800—9,187,176
1710—5,066,337	1770—7,287,586	1810—10,407,556
1820—5,345,351	1780—7,814,937	1820—11,957,505
1830—5,687,903	1790—8,540,736	1830—13,846,851
1740—5,389,705		

The population of Ireland amounted to 7,767,401. The increase of Great Britain since 1801, has always been about one a half per cent. per annum. The comparative proportion of families stands as follows in centesimal parts.

	Agriculture.	Trade, &c.	Others.	Total.
G. Britain	1811—35	44	21	100
	1821—33	46	21	100
	1831—28	42	30	100

Thus trade and manufactures appear to have somewhat increased between 1811 and 1821, agriculture to have somewhat declined; but between 1821 and 1831, the proportion of families employed in trade receded from 46 to 42 per cent. and the agricultural population from 33 to 28 per cent.

Summary of Great Britain.			
1801	1811	1821	1831
England, 8,331,434	9,551,888	11,261,437	13,191,005
Wales, 541,546	611,788	717,438	806,182
Scotland, 1,569,061	1,695,588	2,053,456	2,365,114
Army, Navy, 479,598	640,530	719,506	877,017
10,942,646	12,609,864	14,391,631	16,539,318

Error Corrected.—In noticing a great assemblage of the Trades Unions in London, who met to petition the King for a commutation of the punishment of some Unionists condemned to transportation, we stated the number of the procession at 200,000, while in fact it did not, we find, exceed 30,000. Our mistake arose from the following paragraph in the Times of the 21st, the day before the meeting:

An absurd notion has got hold of these "Trades' Unionists," that notwithstanding their multitudinous meeting, and their alarming and most inconvenient and troublesome procession, their petition must, as a matter of course, be received at Whitehall, provided only that the entire mass of 200,000 petitioners abstain from breaking bedily into the Home-office, and content themselves with sending a small detachment of their numerous army to present it. Now, we can inform them that so clumsy and wretched an expedient will not serve the purpose.

Steam v. the Turn-outs.—The turn-out of the Lan-

cashire workmen in the building trade has introduced a curious application of the steam-engine. This machine is now employed instead of manual labor, in hoisting building materials to the top of the edifice where they are intended to be used. The Liverpool Custom-house is at the present moment rising into existence by the assistance of a steam-engine, which raises sixteen thousand bricks *per diem*, with seven or eight tons of mortar, and at the same time mixes the mortar below.

ROYAL STATUTE—ESTATUTO REAL, For the Convocation of the General Cortes of the Kingdom of Spain.

Art. I.—In conformity to the provisions of the law 5th, chap. 15th, part 2d, and the law 1st and 2d, chap. 7th, book the 6th of the new Constitution, her Majesty, the Queen Governor, in the name of her august daughter Donna Maria II, has resolved to convocate the General Cortes of the Kingdom.

Art. II.—The General Cortes shall be composed of two *Estamentos* (Estates), viz., of the *Proceres* (Peers) of the Realm, and of the *Recuradores* (Deputies) of the Kingdom.

CHAPTER II.

Of the *Estamento* of the Peers of the Realm.

Art. III.—The *Estamento* of Peers of the Realm shall be composed—

1. Of the Most Reverend Archbishops, and of the Most Reverend Bishops.
2. Of the *Grandees* of Spain.
3. Of the *Titulos* of Castile.
4. Of an undetermined number of Spaniards, elevated in dignity and illustrious by their services in various careers, who shall or may have been Secretaries of State, Ambassadors, or Ministers Plenipotentiary, Generals of the Navy or Army, or Judges of the Supreme Tribunals.
5. Of the territorial proprietors and chief partners in manufacturing companies, or mercantile establishments, which shall be found to unite to personal merit, and other corresponding circumstances, the possession of an annual income of 70,000 reals, and have been previously Deputies of the Kingdom.
6. Of those who as public teachers or cultivators of science and literature, have acquired renown and celebrity, and who also possess an annual income of 70,000 reals, whether derivable from private property or a salary paid by the State.

Art. IV.—It shall be sufficient to be Archbishop, or Bishop Elect, or Bishop Auxiliary, to be eligible in that class, and to take a seat in the *Estamento* of the Peers of the Realm.

Art. V.—All the *Grandees* of Spain belong by birth to the *Estamento* of Peers of the Realm, and shall take their seats accordingly, contingent only upon the following conditions—

1. That they shall be 25 years of age complete.
2. That they be possession of the *Grandeeship*, and hold it in their own right.
3. That they shall have an annual income of 200,000 reals.
4. That their estates shall not be subject to any kind of mortgage.
5. That they are not under criminal process.
6. That they are not the subjects of any other Power.

Art. VI.—The dignity of Peer of the realm is hereditary in the *Grandees* of Spain.

Art. VII.—The Sovereign shall elect and name the other Peers of the realm whose dignity shall be for life.

Art. VIII.—The *Titulos* of Castile, who may be named Peers of the realm, shall prove that they possess the following qualifications:

1. That they are 25 years of age.
2. That they are in possession of the *Titulo* of Castile, and hold it in their own right.
3. That they are in the receipt of an income of 80,000 reals.
4. That their estates are not subject to any kind of mortgage.
5. That they are not under criminal process.
6. That they are not the subjects of any foreign Power.

Art. IX.—The number of Peers of the realm is unlimited.

Art. X.—The dignity of Peer of the realm shall be forfeited only in case of legal incapacity, or in virtue of a sentence by which an infamous punishment may be awarded.

Art. XI.—It is reserved to future regulations to determine all that concerns the interior proceedings and mode of deliberating in the *Estamento* of the Peers of the realm.

Art. XII.—The Sovereign shall elect from the Peers of the realm, whenever the Cortes are convoked, those who are to exercise, during the period of that Session, the offices of President and Vice-President of the said *Estamento*.

CHAPTER III.

Of the *Estamento* or *Procuradores* or *Deputies* of the Kingdom.

Art. XII.—The *Estamento* of the Deputies of the kingdom shall be composed of the persons to be chosen according to the law of elections.

Art. XIV.—To be a Deputy of the kingdom it will be necessary—

1. To be a native of those kingdoms, or the son of Spanish parents.

2. To be of 30 years of age completed.

3. To be in possession of an income of 12,000 reals yearly.

4. To have been born in the province for which the Deputy is named, or to have resided in it for two previous years, or to possess in it some property either in town or country, which shall produce half the rent necessary to be a Deputy of the kingdom. In case any individual should be elected a Deputy to the Cortes for more than one province, he shall have the right to choose between those by whom he shall be named.

Art. XVI.—The following cannot serve as Deputies of the Kingdom—

1. Those who have been proceeded against criminally.

2. Those who have been condemned by a tribunal to an infamous punishment.

3. Those who have any natural physical incapacity, notorious or permanent.

4. Those traders who are declared in a state of insolvency, or who have suspended their payments.

5. Proprietors whose estates are mortgaged.

6. Debtors to the public Treasury, in quality of indirect contributors.

Art. XVI.—The Deputies of the Kingdom shall act in conformity to the powers with which they shall have been invested at the time of their election, as prescribed by the Royal Decree of Convocation.

Art. XVII.—The duration of the powers of the Deputies of the Kingdom shall be for three years, except when the Sovereign shall dissolve the Cortes before the expiration of that time.

Art. XVIII.—When a new election shall be proceeded in, whether in consequence of the powers having expired, or that the Sovereign shall have dissolved the Cortes, those who have been Deputies of the Kingdom may be re-elected, provided they still fulfil the conditions required by the laws.

CHAPTER IV.

Of the Meeting of the *Estamento* of the Deputies of the Kingdom.

Art. XIX.—The Deputies of the kingdom shall meet in the place designated by the Royal Decree of Convocation for the celebration of the Cortes.

Art. XX.—The Cortes themselves shall enact rules for determining the form of verification, of the powers of Members.

Art. XXI.—When the powers of the Deputies of the kingdom shall be determined, they will proceed to elect five from among themselves, from whom the Sovereign will select the two who are to act as President and Vice President.

Art. XXII.—The President and Vice President of the *Estamento* of the Deputies of the kingdom shall cease their functions when the Sovereign shall suspend or dissolve the Cortes.

Art. XXIII.—The regulations shall determine every thing relative to the interior proceeding and the mode of deliberating in the *Estamento* of the Deputies of the kingdom.

CHAPTER V.

General Provisions.

Art. XXIV.—To the Sovereign shall exclusively belong the right of convoking, suspending, and dissolving the Cortes.

Art. XXV.—The Cortes shall be assembled in virtue of the Royal Convocation, in the place, and on the day therein named.

Art. XXVI.—The Sovereign shall open and close the Cortes either in person or by commission.

Art. XXVII.—In observance of the law 5th, chapter 15th, part 2d, the Cortes shall be convoked after the death of the King, in order that his successor shall swear to the observance of the law, and receive from the Cortes the necessary oaths of fidelity and obedience.

Art. XXVIII.—Likewise the general Cortes of the kingdom shall be assembled in virtue of the said law, when the Prince or Princess who may be heir to the Crown shall not be of age.

Art. XXIX.—In the case expressed in the preceding

article, the Guardian of the minor King shall swear in the Cortes loyally to watch over the safe keeping of the Prince, and not to violate the laws of the State, receiving from the Peers of the realm, and the Deputies of the kingdom, the necessary oaths of fidelity and obedience.

Art. XXX.—In observance to law 2d, chap. 7th, book 6th, of the New Compilation, the Cortes of the kingdom shall be convoked when any difficult circumstances occur, the weight of which may require their counsel.

Art. XXXI.—The Cortes shall not have the right to deliberate upon any subject which shall not be submitted expressly to their examination in virtue of a Royal decree.

Art. XXXII.—This article shall be without prejudice to the right which always has been exercised by the Cortes of offering petitions to the Sovereign, making use of the form and mode which shall be prescribed in the decree.

Art. XXXIII.—In order to constitute a law there shall be required the approbation of one and the other *Estamento*, and the sanction of the Sovereign.

Art. XXXIV.—In conformity to the law, 1st, chap. 7th, book 6th of the New Compilation, neither taxes nor contributions of any class whatsoever shall be imposed without having been proposed by the Sovereign and voted by the Cortes.

Art. XXXV.—No taxes shall be imposed for more than the space of two years, before the expiration of which period they should be voted anew by the Cortes.

Art. XXXVI.—Before voting in the Cortes the taxes which are about to be imposed, the respective Secretaries of State shall present a statement, in which shall be set out the condition of the several branches of the public Administration; after which the Minister of Finance shall have to propose to the Cortes an *expose* of the expenditure, and the mode by which it is proposed to be met.

Art. XXXVII.—The Sovereign shall suspend the Cortes by virtue of a decree signed by the President of the Council of Ministers, and immediately upon the reading of said decree, both the *Estamentos* will rise, and not resume their sittings or exercise any further deliberation.

Art. XXXVIII.—In case the Sovereign suspends the Cortes they cannot be reunited, but in virtue of a new Decree of Convocation.

Art. XXXIX.—On the day which shall be appointed for the meeting of the Cortes the said Deputies of the kingdom shall assemble in them, except in such cases where the term of three years, during which their powers are given, shall have expired.

Art. XL.—When the King dissolves the Cortes, it is done either in person or by means of a decree, countersigned by the President of the Council of Ministers.

Art. XLI.—In either one or the other case both *Estamentos* shall separate immediately.

Art. XLII.—The order for the dissolution of the Cortes being announced, the *Estamento* of the Peers of the realm cannot be reunited or enter into any resolutions, except, in virtue of a new Convocation the Cortes shall be reassembled.

Art. XLIII.—When the order of the Sovereign dissolves the Cortes, the powers of the Deputies of the kingdom are annulled by the same act.

Art. XLIV.—All that may be done or determined afterwards is null and void.

Art. XLV.—When the Cortes shall be dissolved others shall be called before the expiration of one year.

Art. XLVI.—When the Cortes are convoked, at the same time are to be convoked both the one and the other *Estamento*.

Art. XLVII.—One *Estamento* cannot be assembled without the other.

Art. XLVIII.—Each *Estamento* shall hold its Sessions in separate Chambers.

Art. XLIX.—The Sessions of both the one and the other Estate shall be public, except in those cases where the regulations shall point out.

Art. L.—The Peers of the realm as well as the Deputies of the kingdom shall not be held responsible for the opinion and votes which they may give in discharge of their duty.

Art. LI.—The regulations of the Cortes shall determine the relations of the one and the other *Estamento* as well as reciprocally between themselves as well as respect to the Government.

(Signed) FRANCISCO MARTINEZ DE LA ROSA,
NICHOLAS MARIA GARELLY,
ANTONIO REMON ZARCO DEL VALLE,
JOSE VASQUEZ FIGUERA,
JOSE DE IMAZ,
JAVIER DE BURGOS.

[FOR THE NEW YORK AMERICAN.]

MR. EDITOR.—The writer, acting on the suggestion of your Western Correspondent, has attempted to verify what was poetry before. He cannot claim the credit of giving the lines a "happier dress," but, albeit, not a poetical friend of you or any body else, he delights in simple rhyme, and has tried to retain that quality in the following—

INDIAN SERENADE

In imitation of the original prose translation, made by Mr. H.

Bud of the forest, now shut in thy bower,
Rise from the leaves swelling round thee, a flower!
Beautiful bird of the prairie awake!
Powerless the hawk is, and harmless the snake.
Thou with the eyes of the fawn, give to me
Wild, timid glances, and draw me to thee:
Warm are thy looks, and the joy thy disclosure
Gladdens my heart, as the dew drop the rose.
Sweet is thy breath as the sigh of the south;
Sweet as the store of the bee thy mouth:
Sweet is thy voice as the music of rain
That lulls the roving hunter to slumber again!
When the mow me, and the maple trees run
Flow the springs murmur, and swell to the sun
So towards thee swells my blood with delight;
So, too, I murmur to silence, all night.
When with mild passion thy bosom is mov'd,
How my heart sings unto thee my lov'd!
So, in the moon of red berries, awake
Breeze, and sing to the leaves as they shake.
If thou art sad, and art sighing the while,
Dark is my heart and uncertain my smile!
Like the bright river that bears on its breast
Sunset, made dim by a cloud in the west.
Morning's red ray, as it shines on the lake,
Brightens the ripples that night breezes make;
So, when thou smilest, the gloom that before
Clouded my spirit, surrounds me no more.
Wake and behold me, beloved and best!
Blood of my heart! come and live in my breast!
Heaven, earth, water, are smiling around;
I alone sadly look up from the ground.

R. L.

[FOR THE NEW YORK AMERICAN.]

THE BRIDE MAID'S GRAVE.

Lines suggested by the recent death of Miss M***** C***, of Ulster, N. Y.

"And then I think of one, who in her youthful beauty died,
The fair meek blossom that grew up, and faded by my side."
Where the tender o'er's wave,
And soft winds sweep,
We will make her gentle grave,
And memories keep—
There the stainless virgin Rose,
And Violet,
Will their balmy lids unclose,
With tears wet—
Such as solemn Evening sings
On Lillies fair,
While each bell in fragrance rings
For spirit pray'r.
With the bridal-chapel bound,
Still on her brow,
We will "lay her in the ground,"
Afar from wee.

M.

New York, May 24th.

[From the Youth's Sketch Book.]

THE LITTLE BOAT BUILDERS.

Beside the sea-shore Charles and Ben
Sat down, one summer day,
To build their little boats—and then
To watch them sail away.
"Hurrah!" the boats have left the shore,
And side by side they sail;
And pleasant sunshine all before,
Behind, the summer gale.
But all too rough the sunny sea—
One boat upsets—and then
They clap their hands and shout with glee,
"Hurrah! she's up again."
But on the wave it cannot live;
It sinks—and now the other!
And now a louder shout they give,
"Hurrah! we'll build another!"
"Let's make ourselves a little sea—
The ocean is too large—
This tub will do for you and me
To sail our little barge."
Dear children! thus through life your joys
May vanish! Will you then
Still laugh as o'er your childish toys,
And think they'll rise again?
And when life's ocean seems too wide
Your quiet course to trace,
Say will you wisely turn aside,
And choose a humbler place?
And will you, as your joy's decay,
First one, and then the other,
Shout on, as one hope sink away,
"Hurrah! I'll build another!"

TIME.

On! on; still on! the bell of Time tolls on
Its unregarded tocsin to the ear;
On! on! the stream of Time, that long hath gone
O'er crown and crook, o'er banquet and o'er bier,
Rolls by; whilst on its banks we sport and play,
Reckless of rising floods. Years disappear,
And kindred, vanish; yet the heedless mind
Can note no promise in the buds that find
New thrones in old woods—when the cushat calls
Its spring recitile. Still we chase away
The omen from our breast, and shut our sight
To the hand-writing on the wall, while night
Blots out the idle labors of the day!

Canal Tolls.—The tolls collected upon the New York Canals, for the week ending on the 14th May, amount to the sum of *forty-six thousand five hundred and thirty-three dollars and twenty-eight cents*. The total amount collected during the four weeks ending on the 14th instant, is \$195,018 57.—[Alb. Argus.]

TOWNSEND & DUFFEE, of Palmyra, *Manufacturers of Railroad Rope*, having removed their establishment to Hudson, under the name of *Duffee, May & Co.* offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the U. S. As to the quality of Rope, the public are referred to J. B. Jervis, Eng. M. & H. R. R. Co., Albany; or James Archibald, Engineer Hudson and Delaware Canal and Railroad Company, Carbon date, Luzerne county, Pennsylvania.
Hudson, Columbia county, New-York, }
January 29, 1833.

NOTICE TO MANUFACTURERS.

SIMON FAIRMAN, of the village of Lansingburgh, in the county of Rensselaer, and state of New-York, has invented and put in operation a Machine for making Wrought Nails with square points. This machine will make about sixty 6d nails, and about forty 10d nails in a minute, and in the same proportion larger sizes, even to spikes for ships. The nail is hammered and comes from the machine completely heated to redness, that its capacity for being clenched is good and sure. One horse power is sufficient to drive one machine, and may easily be applied where such power for driving machinery is in operation. Said Fairman will make, vend and warrant machines as above, to any persons who may apply for them as soon as they may be made, and on the most reasonable terms. He also desires to sell one half of his patent right for the use of said machines throughout the United States. Any person desiring further information, or to purchase, will please to call at the machine shop of Mr. John Humphrey, in the village of Lansingburgh.—August 18, 1833. A29 if RM & F

TO IRON MANUFACTURERS AND OWNERS OF IRON ORE BEDS.

JOSEPH GOULDING, of Keeseville, Essex county, N. Y., has invented and patented a *Magnetic Separating Machine*, for separating Iron Ore from the extraneous matter usually found in connection with it; and he begs leave to recommend it to the especial notice of owners of Ore Beds as possessing qualities of great importance, as by the use of it many ore beds can be made very valuable, it being applicable in all cases when the Ore is magnetic.

The quality of the iron made is much improved by the process of separation, indeed good iron can, after separation, be made from ore which would without it be considered not worth working. There is also found to be a great saving in the transportation of ore, and in time and fuel required to work the same into iron.

Mechanics can be furnished at short notice which will separate from half a ton to twenty tons each in twenty-four hours.

J. Goulding also manufactures to order, *Cylindrical Forge and Blast Furnace Bellows*, of the most improved construction, and which are successfully used in nearly all the Forges and Furnaces in Clinton and all the adjoining counties. M 14tf
January 20th, 1834.

RAILWAY IRON.

Ninety-five tons of 1 inch by 1 inch, Flat Bars in lengths of 14 to 16 feet counter sunk holes, ends cut at an angle of 45 degrees with splicing plates, nails to suit.
200 do. 14 do.
40 do. 14 do.
800 do. 2 do.
800 do. 2 1/2 do.
soon expected.

250 do. of Edge Rails of 36 lbs. per yard, with the requisite chairs, keys and pins.

Wrought Iron Rims of 30, 33, and 36 inches diameter for Wheels of Railway Cars, and of 60 inches diameter for Locomotive wheels.

Axles of 2 1/2, 2 3/4, 3, 3 1/4, and 3 1/2 inches diameter for Railway Cars and Locomotives of patent iron.

The above will be sold free of duty, to State Governments and Incorporated Governments, and the Drawback taken in part payment.

A. & G. RALSTON,
9 South Front street, Philadelphia.

Models and samples of all the different kinds of Rails, Chairs, Pins, Wedges, Spikes, and Splicing Plates, in use, both in this country and Great Britain, will be exhibited to those disposed to examine them. d71mcwv

ALBANY SEED-STORE AND HORTICULTURAL REPOSITORY.

The subscriber having resumed the charge of the above establishment, is now enabled to furnish traders and others with FRESH GARDEN SEEDS, upon very favorable terms, and of the growth of 1833, warranted of the best quality.

The greatest care and attention has been bestowed upon the growing and saving of Seeds, and none will be sold at this establishment excepting those raised expressly for it, and by experienced seedmen; and those kinds imported which cannot be raised to perfection in this country; these are from the best houses in Europe, and may be relied upon as genuine.

It is earnestly requested whenever there are any failures hereafter, they should be represented to the subscriber; not that it is possible to obviate unfavorable seasons and circumstances, but that satisfaction may be rendered and perfection approximated.

Also—French Lucern, White Dutch Clover, White Mulberry Seed, genuine Mangel Wurtzel, Yellow Locust, Ruta Baga, and Field Turnip Seeds, well worth the attention of Farmers.

W. THORBURN,
347 N. Market st. (opposite Post Office.)

Catalogues may be had at the Store; if sent for by mail, will be forwarded gratis. Orders solicited early, as the better success can be done in the execution.

* Mr. Thorburn is also Agent for the following publications, to wit—

NEW YORK FARMER and American Gardener's Magazine. MECHANICS' MAGAZINE and Register of Inventions & Improvements.

AMERICAN RAILROAD JOURNAL and Advocate of Internal Improvements; and the

NEW-YORK AMERICAN, Daily, Tri-Weekly, and Semi-Weekly; either or all of which may be seen and obtained by those who wish them by calling at 347 North Market street, Albany.

LOCOMOTIVE ENGINES.

THE AMERICAN STEAM CARRIAGE COMPANY, OF PHILADELPHIA, respectfully inform the public, and especially Railroad and Transportation Companies, that they have become sole proprietors of certain improvements in the construction of Locomotive Engines, and other railway carriages, secured to Col. Stephen H. Long, of the United States Engineers, by letters patent from the United States, and that they are prepared to execute any orders for the construction of Locomotive Engines, Tenders, &c. with which they may be favored, and pledge themselves to a punctual compliance with any engagements they may make in reference to this line of business.

They have already in their possession the requisite apparatus for the construction of three classes of engines, viz. engines weighing four, five, and six tons.

The engines made by them will be warranted to travel at the following rates of speed, viz. a six ton engine at a speed of 15 miles per hour; a five ton engine at a speed of 18 miles per hour; a four ton engine at a speed of 22 1/2 miles per hour. Their performance in other respects will be warranted to equal that of the best English engines of the same class, with respect not only to their efficiency in the conveyance of burthens, but to their durability, and the cheapness and facility of their repairs.

The engines will be adapted to the use of anthracite coal, pine wood, coke, or any other fuel hitherto used in locomotive engines.

The terms shall be quite as favorable, and even more moderate, than those on which engines of the same class can be procured from abroad.

All orders for engines, &c. and other communications in reference to the subject, will be addressed to the subscriber, in the city of Philadelphia, and shall receive prompt attention.

By order of the Company, WILLIAM NORRIS, Secretary.

December 2d, 1833.

For further information on this subject see No. 49, page 72 of this Journal. d6

RAILROAD TURNOUTS, REVOLVING PLATFORMS AND SIDELINGS.

The subscriber having been for some years engaged in constructing turnouts, and inserting the necessary switches and fixtures appertaining to the same, on the Baltimore and Ohio Railroad, and as those works on that road will be shortly completed, he is desirous of being employed by any Railroad Company requiring work of the above description.

He will either contract at a fixed price to execute the work, he providing all the necessary materials and fixtures, or otherwise,—or he will engage himself at a stated salary.

In relation to his abilities and general character he begs to refer any Company, disposed to engage him, to the Baltimore and Ohio Railroad Company.

Letters can be addressed to him at the Office of Construction Baltimore and Ohio Railroad, Baltimore.

a26 6t REUBEN ALER.

SURVEYORS' INSTRUMENTS.

Compasses of various sizes and of superior quality warranted.

Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by E. & G. W. BLUNT, 154 Water street, J31 6t corner of Maidenlane.

ENGINEERING AND SURVEYING INSTRUMENTS.

The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely new: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy—also, a Railroad Goniometer, with two Telescopes—and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.

WM. J. YOUNG,
Mathematical Instrument Maker, No. 9 Dock street, Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.
Baltimore, 1832.

In reply to thy inquiries respecting the instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad. I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable.

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sights, leaves the engineer scarcely anything to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to lateral angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,
JAMES P. STABLER, Superintendent of Construction of Baltimore and Ohio Railroad.
Philadelphia, February, 1833.

Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind now in use, and as such most cheerfully recommend it to Engineers and Surveyors.
E. H. GILL, Civil Engineer.
Germantown, February, 1833.

For a year past I have used Instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these Instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others of that purpose.

HENRY R. CAMPBELL, Eng. Philad., Germant. and Norrist. Railroad
ml 1y

STEPHENSON,

Builder of a superior style of Passenger Cars for Railroads
No. 264 Elizabeth street, near Bleeker street,
New-York.

RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part of the New-York and Harlem Railroad, now in operation.
J25 tf

RAILROAD CAR WHEELS, BOXES AND AND OTHER RAILROAD CASTINGS.

Also, AXLES furnished and fitted to wheels complete at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to. Also, CAR SPRINGS.

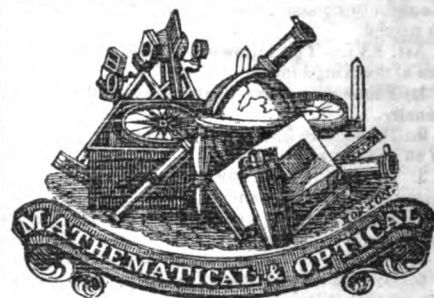
Also, Flange Tires turned complete.

J8 ROGERS, KETCHUM & GROSVENOR.

NOVELTY WORKS,

Near Dry Dock, New-York.

THOMAS B. STILLMAN, Manufacturer of Steam Engines, Boilers, Railroad and Mill Work, Lathes, Presses, and other Machinery. Also, Dr. Nott's Patent Tubular Boilers, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited. ml8



INSTRUMENTS.

SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

EWING & HEARTTE, at the sign of the Quadrant, No. 53 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude.

For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewin & Heartte.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable. They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES P. STABLER,

Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' Instruments of your Manufacture, particularly Spirit Levels, and Surveyor's Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

WILLIAM HOWARD, U. S. Civil Engineer.

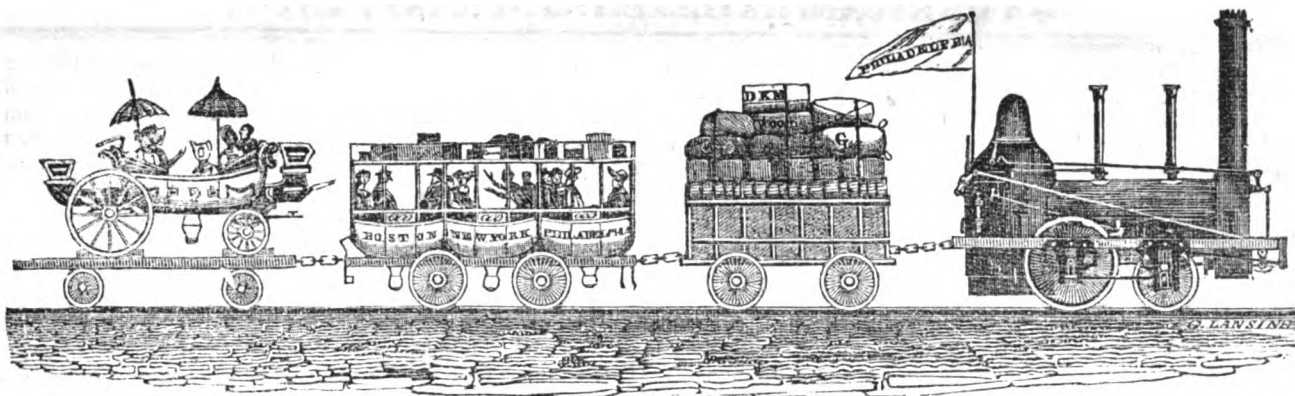
Baltimore, May 1st, 1833.

To Messrs Ewin & Heartte.—As you have asked me to give my opinion of the merits of those instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming acquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warmest encouragement. Wishing you all the success which your enterprise so well merits, I remain, yours, &c.

B. H. LATROBE,

Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them, upon application, to any person desirous of perusing the same. m25



AMERICAN RAILROAD JOURNAL, AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT No. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, EDITOR.]

SATURDAY, JUNE 7, 1834.

[VOLUME III.—No. 22.]

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, JUNE 7, 1834.

RAILROADS—WIDTH OF TRACKS—UNIFORMITY OF.—Those of our readers who have taken the Journal from its commencement, will probably recollect a communication published in No. 4, Vol. 1, showing the importance of uniformity in the width of railroad tracks. We have occasionally referred to the subject as one requiring early and particular attention. It will at once be seen that, by a variation of three, or even two inches, in the space between the rails of roads, now distinct, but destined hereafter to be united,—as, for instance, the *South Carolina*, the *Tuscumbia*, and other roads, which, to the extent of many hundred miles, will, within the next ten years, be connected with them,—the engines and cars of one road cannot be used upon the other roads, and therefore a transshipment will be necessary, at the termination of each part of what should be one great whole.

THE SARATOGA AND SCHENECTADY RAILROAD.—The locomotive engine commenced its regular trips on this road on Wednesday the 28th ult.; on which occasion a party of gentlemen from this village and Ballston Spa, were politely invited by John B. Lasala, Esq., one of the directors and a principal stockholder, to join in the festivities of the occasion. They repaired to Schenectady in a railroad barouche, where they were joined by two of the directors. The engine left that place a little before 12,

and reached this village, drawing a train of 12 or 14 carriages and waggons, in one hour and twenty minutes. The party repaired to the Pavilion, where they partook of the hospitality of Mr. Lasala in a rich and sumptuous dinner. After the drinking of several toasts, the party separated at an early hour, happy in the polite attentions they had received, and gratified in having witnessed the good condition of the road, and the increasing and flattering prospects of business thereon. Indeed, the travel is continually augmenting; and it is a source of no small pleasure, that the various estimates of income heretofore given are likely to be more than realized. Though not immediately connected with the work, we cannot but feel a deep and lively interest in its prosperity, and in every thing pertaining to the welfare of its stockholders.

Another engine, we understand, will be placed on the road in a short time.—[Saratoga Sentinel.]

RENSSELAER AND SARATOGA RAILROAD.—This road, from Ballston Spa to Waterford, is under contract, and the work of constructing it in progress. The building of the bridges over the Hudson and Mohawk, and also the road itself from this to Waterford, will be put under contract without delay.

The officers of the company for the present year are as follows—they were chosen at an election held yesterday:

Stephen Warren, President, (Richard P. Hart having declined a re-election.)

Directors—Elisha Tibbitts, George Griswold, John Cramer, John Knickerbacker, Richard P. Hart, Townsend M'Coun, Nathan Warren, Stephen Warren, George Vail Le Grand Cannon, Moses Williams, John P. Cushman, and John Paine.—[Troy Press.]

Extract of a letter dated Boston, May 30, 1834:

"Our Worcester Railroad is doing very well. The cars paid \$900 last week, \$700 of which is clear profit, beyond the expense of their management of \$100 a day, which is an interest on the whole \$600,000 which has been assessed. The weather, besides, has been unusually bad, and so cold, that few persons comparatively have gone out. I think therefore that the stock will eventually be very productive. They now only run seven miles, but will, in a few days, go thirteen miles, which is the first stage towards Worcester. A friend of mine came today from Newton in 19 minutes with a watch in his hand. They have at other times landed in fifteen minutes, which is at the rate of twenty-eight miles an hour. At this rate but few will go in the stage, which, including stops, takes an hour and a half."—[Jour. Com.]

PENNSYLVANIA RAILROAD.—The advantages of this great state work are already becoming developed. On Thursday afternoon, a lot of 80 bbls. superfine flour, from Columbia, was brought to the depot corner of Vine and Broad streets. This is the first flour that has been brought from the Susquehanna by this route. A lot of between 2 and 300 bushels of corn has also been received from Columbia by this road.—[Phil. Com. Her.]

RAPID TRAVELLING.—Yesterday, the passengers by the Railroad line from New-York were landed at ten minutes past one o'clock. Our exchange papers brought by this conveyance were delivered at our office at eighteen minutes after one.—[Ibid]

CANALS.—The Eastern Division of the Pennsylvania Canal, the Lehigh, and the Morris Canals, are now in excellent navigable order, and, we are pleased to learn, are doing a brisk business. An arrangement has been made with the directors of the Morris Canal for transporting a large quantity of coal from the Mauch Chunk mines to Newark, and other points along the line of this work. This arrangement cannot but be highly advantageous to those interested in the mines, as well as to the owners of the canal stock. Paterson and other places will also come in for a share of the benefits of this arrangement.—[Ibid.]

The corner stone of the Cape Fear, Yadkin and Pedee Railroad, was laid with imposing ceremonies at Fayetteville, on the 15th instant, an interesting account of which appears in the last Observer, and shall be transferred to our columns next week.—[Raleigh Register.]

NEW IRON STEAMBOAT, &c.—We recommend to the attention of the public, the advertisement of our late highly enterprising and public spirited townsman, G. B. Lamar, Esq. (now of Savannah,) whose efforts in facilitating the river communication between this city and Savannah—and particularly the present one, now nearly completed, of a new Iron Steamboat—are worthy of the highest praise, and we hope will insure to him the great success they merit. This Iron Boat is the first of the kind ever introduced into this country, and we doubt not will prove to be one of the most valuable commercial facilities it possesses.—[Augusta Chronicle.]

ECONOMY.—He who saves in one way, that he may enjoy his savings in a more rational one, is the true philosopher: he will do good while living, and be remembered with respect when dead.

Specification of a Patent for an Improvement in Wheels for Cars and Locomotive Engines, to be used upon Railroads. Granted to ROSS WINANS, Civil Engineer, city of Baltimore, November 19, 1833.

To all whom it may concern, be it known that I, Ross Winans, of the city of Baltimore, in the state of Maryland, Civil Engineer, have invented an improved mode of constructing wheels for cars and locomotive engines, to be used upon railroads, and that the following is a full and exact description thereof.

The more clearly to exhibit the difference between my improved wheel and those which have been heretofore employed, I will briefly point out the manner in which wheels for this purpose have been most commonly made; not intending, however, as it is not necessary for the purpose in view, to notice all the plans which have been adopted.

1st. Such wheels have been made wholly, or nearly so, of cast iron; the face, or tread of them, being cast within a *chill*, consisting of a thick rim, or hoop, of iron, which forms a part of the mould.

2d. The wheels have been cast without being chilled, and afterwards hooped with wrought iron, which then forms the face and flanch of the wheel.

3d. A cast iron nave, or hub, has been made to receive wooden spokes, inserted in wooden felloes, which were hooped with a tire of wrought iron.

4th. The hubs have been of cast iron, with spokes of wrought iron, and a rim of wrought or of cast iron, hooped with wrought iron.

These plans have each their respective advantages and disadvantages, but neither of them has fully answered the purpose for which it has been adopted; the wrought iron hoop, or tire, upon the cast iron rims have gradually become loosened; the wooden spokes and felloes have pressed the one into the other, and the tire has ceased to bind them, an evil which wedging will not cure. To remedy these defects, and others incident to some of the wheels, is the object of my improvement.

My wheel consists essentially of three parts, namely, an *interior wheel*, the hub, spokes, and rim of which are of cast iron; a *rim of wood*, formed in a way to be presently described, surrounding the cast iron wheel; a *hoop or tire of wrought iron*, surrounding the wood, and forming the face, or tread, of the wheel.

The *inner wheel* is made, in some respects, like those first noticed, but the face is not chilled, nor has it the same form with the chilled face. It should be made of the same width on the rim, with the wrought iron tire which is to surround and form the tread of the wheel, say five inches. The face of the cast rim may be cylindrical for the greater part of its width, but it must in this case have a fillet, or edge, projecting up on each side of it, say to the height, and of the thickness, of half an inch, which will then give to it the appearance of a wheel with a double flanch, having a cylindrical tread of four inches in width. Instead of making the face in this form, I intend sometimes to give to it a regular declination from each edge towards the centre. A section of the rim, transversely, would then be somewhat in the form of the letter V, but with the angle obtuse. The inclination will be sufficient if the diameter at

the centre of the rim is one inch less than that at the sides, or edges. Other forms may be given to the face of the rim, by which the object in view may be attained, namely, that of retaining the wooden rim in its place, without its allowing it to move out on either side.

A *rim of wood* is to be placed around this wheel, which may consist of any convenient number of pieces, fitted to each other, and to the face of the wheel. The grain of the wood is to cross the rim of the wheel, running parallel with its axis. These pieces may be fitted to the face of the wheel with greater facility by driving them into a large hoop, running as a chuck in a lathe, by which means they may be turned to the form required; they may then be fastened on to the rim by wood screws, or otherwise, and turned thereon to receive the iron hoop or tire. The best thickness of this rim will be from two to four inches.

The *hoop, or tire, of wrought iron*, is to be made in the usual form, turned truly, and passed on over the wooden rim when expanded by heating it as highly as may be done without burning the wood. Bolts are then to be passed through the wrought iron, the wood, and the cast iron rims, which are secured by nuts, to confine the whole together.

The hub, or nave, in a wheel thus made, may be cast entire, instead of having those divisions, or openings, which are necessary in the chilled wheel, to allow for contraction. Although I have described the spokes and rim as being of cast iron, either or both of them may be of wrought iron, but it would be more costly, without affording any adequate advantages; those of cast iron being perfectly safe in this mode of construction.

It will be readily perceived that the wood, thus pressed between two hoops of iron, has an extent of bearing surface which will effectually prevent its being condensed by the force to which it is subjected; whilst, by its elasticity, it will tend to preserve both the road and the vehicles passing over it. If perfectly dried when put on, which may be done by artificial heat, the wood will never shrink, but, on the contrary, will expand, and render all the parts the more firm. Such a wheel will have less tendency than any other, where wood is employed, to get out of truth; and should wedging become necessary, it may be done more effectually than with any other.

The dimensions of most of the parts of such a wheel need not differ greatly from those of the cast iron wheels with chilled rims, but, like them, must vary according to their diameter, and the load they are to sustain; the following is a good proportion for wheels of three feet in diameter, intended for cars carrying three tons.

Cast iron interior wheel, twenty-nine inches diameter; hub, seven inches long by six in diameter; spokes, twelve in number, five-eighths of an inch thick, and three and a half or four inches broad; rim, five inches broad by five-eighths of an inch thick; wooden rim, two and five-eighths inches thick, five inches deep, measuring across the rim; wrought iron tire, seven-eighths of an inch thick, five inches broad; flanch, one and one-fourth inch deep, one inch thick.

Although I have described the rim of wood as placed with its grain crossing the rim of the wheel, and am fully convinced

that this is the best manner of placing it, yet it will answer the purpose, to a considerable extent, when running in the direction of the rim, and I do not intend, therefore, to limit myself in this respect, as what I claim as my invention is the interposing a rim or belt of wood between an interior wheel of cast or of wrought iron, and a wrought iron rim or tire, and securing the whole together in the manner and for the purposes hereinbefore set forth.

ROSS WINANS.

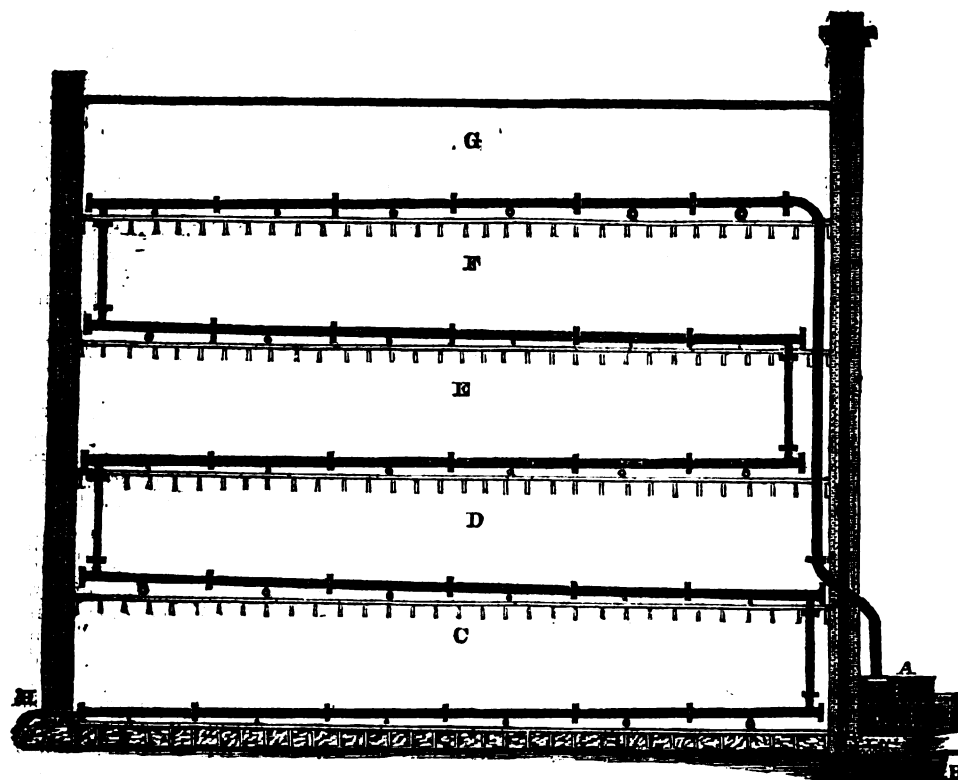
Effectual Plan of Heating Factories, &c., by Steam. Communicated by the INVENTOR. To the Editor of the Mechanics' Magazine and Register of Inventions, &c.

[We have much pleasure in inserting the following communication from Mr. SNODGRASS, an eminent engineer of Glasgow, N. Britain, now on a visit to the United States for the purpose of ascertaining the state of manufactures and mechanical inventions here. We hope to be favored with other contributions during his tour through various parts of the country, which, we are persuaded, will be highly interesting to our readers.—ED. M. M.]

SIR,—Having perused your interesting and valuable Magazine, I beg leave to avail myself of the pleasure of contributing in a small degree what appears to me would materially benefit the rising manufactures of this justly far-famed free country, namely, the best plan of heating by steam. Although I am almost a stranger here, I learn there are, and have seen, a number of beautiful factories heated by stoves, while in Great Britain there are none, to my knowledge, otherwise than by steam. It must be evident that this method is incompatible with the American atmosphere, which in particular seasons of the year, I am told, is highly electrical, and destitute of hydrogen. Stove heat must accelerate this evil in a considerable degree, in the apartments of the factories, which are injurious to the staple of the cotton, during the process of roving and spinning, unhealthful to the workers, and a great increase of risk of accident from firing the building.

Having invented and introduced the system of heating by steam pipes, from 1799 to 1807, (see Philosophical Transactions, London, Vol. for March, 1807,) and since then having 27 years' experience, I presume to send you herewith a plain sketch of the simplest and most effectual plan of heating any regular built factory, and with steam of the lowest temperature. REFERENCES—A, the boiler; B, the ash-hole; C, 1st flat; D, 2d flat; E, 3d flat; F, 4th flat; G, garret flat; H, condensed water pipe.

On looking at the plan from right to left, the pipes are inclined according to the length of the factory, so as the air and condensed water may freely recede before the steam, then descend by the perpendicular pipe to next flat, and so on from flat to flat, after sending the steam to the garret flat in the first instance by a large upright, not less than eight or nine inches in diameter, thus allowing as little condensation as possible taking place in that pipe; it ought to be secured from the external air, and made as a reservoir of steam to the boiler. As each range of pipes descends from the garret flat, they ought to increase in diameter about a half inch in each flat, owing to the latent heat of the steam diminishing as the distance increases from the boiler. The small



copper pipe at the end of the cast iron range of pipes in the lowest flat, for the discharge of air and condensed water, may be about three-fourths of an inch in diameter. These pipes should be laid on small rollers, pivots of which to move in a small frame (cast iron) fixed on the floors, and close to the wash-board of the apartment, on any side most convenient for passing them, thus, not almost, appearing in the room, and, in the lowest position, more effectually heating the air.

The data for proportioning the diameter of these pipes to the temperature of the air in the apartments is a square foot of surface of steam pipe for 200 cubic feet of air, to produce about 64 degrees of heat, supposing the steam about 4 lbs. on the square inch of pressure above the atmosphere, and the surface of the pipes black,—160 superficial inches steam pipe for 72 degrees of heat.

I may add: the boiler may be so placed that the condensed water may be returned to the bottom, and save in a small degree the latent heat therein. Where steam engines are employed to drive the machinery, the surplus steam for a great part of the year is sufficient to heat the factory, thus saving the whole expense of fuel nearly. Insurance ought not to be more than the half, compared with the risk of stoves. If any further information is found wanting, your taking the trouble of addressing me, care of Messrs. Thomson & MacFarlane, No. 87 Pearl street, will be duly attended to by,

Sir, yours, most respectfully,

NEIL SNODGRASS,
Civil Engineer, of Glasgow.

New-York, May 5, 1834.

N. B.—In irregular built factories, much is to be attended to in the arrangement of steam apparatus, for the proper charging with steam, and discharging air and water; also, the best plan for joining the pipes to make them permanent and cheap, which I shall be glad to engineer, and insure the result; also, my metallic packings for steam engine pistons, and piston valves, a drawing and de-

scription of which shall be handed you in a short time.

N. S.

STATISTICS OF FRENCH MANUFACTURES.

—The principal manufactures of France may be dated from the reign of Louis XIV., whose minister, the celebrated Colbert, invited foreign artists and artisans of every kind and of distinguished merit into the kingdom, and encouraged them by premiums to fix their establishments in France. But towards the end of his reign, that monarch, by his revocation of the Edicts of Nantes, and his persecution of the Protestants, in a great measure destroyed the advantages arising from the foreign establishments, by forcing thousands of artisans to seek refuge in England, and the Low Countries, into which they introduced those branches of industry, especially silk. Thus France lost the services of some of her most ingenious mechanics through the folly of an infatuated monarch.

To give an idea of the manufactures of France, it is sufficient to cite the draperies of Louviers, Sedan, Elbeuf, Castres; the cambrics of Valenciennes and Cambray; the pier-glasses of St. Gobain, whose dimensions are occasionally ten feet in height by four and five feet broad; the cotton manufactures of St. Quentin, Rouen, &c. &c.; the linens of Brittany, Dauphiny, and the northern provinces; the laces of Lille, A. lencon, Valenciennes, and Puy; the silks of Lyons, Avignon, Nimes, and Tours; the tapestries of the Gobelins, at Paris; the carpets of La Savonnerie and Aubusson, which, in beauty of design and brilliancy of colors, rival those of the east; the porcelain of Sevres, her manufactures of clocks and watches, jewellery, crystal, mock diamonds, bronzes, fire arms, &c. To these might be added an immense number of manufactories which were wholly unknown in France half a century ago, such as files, needles, wool-cards, &c.

We have learned from official sources, that the capital employed in manufactures

amounts to 1,820,105,409 fr., which is applied as follows:

In indigenous materials,	416,000,000 fr.
In materials imported,	186,000,000
In wages,	844,000,000
In general expenses, as wear and tear of machinery and tools, repairs, fuel, lights, interest of money, invested as fixed capital, which being deducted from the gross amount leaves 182,105,409 francs for the profit of the manufacturers,	192,000,000

The annual produce of the principal branches of industry in 1828 has been calculated in round numbers as follows:

Thrown silks, silk stuffs, gauzes and crapes,	160,000,000 fr.
Cloths and woollen stuffs,	250,000,000
Linen drapery and thread lace	210,000,000
Stationary,	25,000,000
Cotton,	200,000,000
Lace,	10,000,000
Hardware,	125,000,000
Coal, and other produce of mines and quarries,	30,000,000
Watches and clocks,	30,000,000
Gold and silver articles,	50,000,000
Jewellery,	40,000,000
Glass, plate glass, china, pottery, bricks,	80,000,000
Lime and plaster,	15,000,000
Salts and acids,	30,000,000
Soap,	30,000,000
Refined sugar,	15,000,000
Hats,	30,000,000
Leather,	160,000,000
Dye and varnish,	50,000,000
Perfumery,	15,000,000
Books,	30,000,000
Beer,	60,000,000
Cider and perry,	50,000,000
Brandy,	75,000,000
Upholstery and musical instruments,	50,000,000

Total, 1,820,000,000 fr.

Having enumerated the principal manufactures in France, we shall state from official information the progress made in the productions of those manufactories from 1812 to 1827. In the first place, we find that under the government of the empire, when Belgium and the left bank of the Rhine were under her dominion, France in 1812 employed in her manufactories 35 millions kilogrammes, or 70 million pounds of native wool. In 1816 the quantity of native wool, with the amount imported of foreign wool, for fine cloths, merinos, and cachemires, &c. was in the whole 80 million French pounds, which, with the difference of nearly ten per cent., is equal to 90 million lbs. English. In 1824 and 1826 the quantity of wool used in the manufactories amounted to 48 millions of kilogrammes, making an increase in the consumption of wool in 14 years of 26 millions of French pounds, or more than one million English tons.

In 1812, the quantity of cotton spun into thread did not exceed 10,362,000 kilogrammes. The consumption in 1816 amounted to 12 millions of kilogrammes; in 1825, the quantity manufactured was 26 millions; in 1826, 32 million kilogrammes of cotton employed in prints, calicoes, tulles, &c.: thus the consumption has been more than tripled in 14 years. The consumption of silk has not

less increased in proportion to wool and cotton. In 1816, France imported 400,000 kilogrammes of silk; in 1824 and 1825, 650,000 kilogrammes; and in 1826, not less than 800,000 kilogrammes, notwithstanding the progress made and encouragement given to breeding of silk worms in the country. In 1816, the quantity of coals extracted from the mines did not exceed 1000 million kilogrammes; in 1826, they furnished 1500 million kilogrammes. In 1814 and 1816, the quantity of iron manufactured amounted to 100 millions, and in 1825 and 1826, it had increased to 160 millions of kilogrammes.—[Goldsmith's Statistics of France, and Rep. Pat. Inv.]

The following letter was read, together with, and formed a part of, the report of a committee of the Pennsylvania Legislature, appointed to inquire and report as to the best method of conducting the business of transportation upon the Pennsylvania Railroads.

It was intended that this should follow the Report, which was published in No. 15 of this volume of the Journal, but was at the time mislaid.

Letter from Moncure, Robinson, Esq., to Wm. H. Keating, Chairman, &c., dated Harrisburgh, February 21, 1833.

Sir,—I have received your letter of yesterday, and with pleasure present the following reply to the questions proposed by the committee.

The first inquiry is, "on roads of the length and undulating character of the Philadelphia and Columbia railroad, or connecting two lines of canal, like the Alleghany portage railroad, what are the relative advantages of transportation by horse power, or by locomotive engines?"

When the profile of a railroad is undulating, unless its grades, or ascents and descents, are very short, the useful effect of a horse is materially impaired. In other words, although in descents the force exerted by him may be but trifling, he cannot, in consequence, draw a proportionably large load on ascents. With locomotive power, the diminution in useful effect is by no means in a corresponding ratio; and provided the graduation of a railroad be not at any point too steep to admit of an engine urging on its load by the adhesion of its wheels, a large proportion of what would be its useful effect on the level may be had. The engine, on ascents, travelling at a slower rate under an increased stress; on levels, or on descents, exerting any disposable force in attaining a higher speed.

When a line of railroad is not only undulating, but a long one, the superiority of locomotive power becomes more decided. The loss of time and waste of steam in starting and stopping, become relatively of less moment, and the saving in time, by the superior velocity which locomotives enable us to attain, becomes more important. In the case of the Columbian and Philadelphia railroad, for example, four days would probably be required, with horse power, for the transportation of merchandise and produce between Columbia and Philadelphia. With locomotive power, the trips may be made with entire ease and safety in six hours, including stoppages. Supposing the cost of transportation to be the same with either power, a large accommodation would be afforded to the public, in the greatly increased speed of transportation. Persons coming to Columbia with their produce would have it in their power to travel with it to Philadelphia, and to attend personally to its disposition, without any sacrifice of time; and to the community generally, facilities in intercourse and travel, and in the transportation of the mail, would be afforded, which can scarcely be appreciated until they have been realized.

There is no peculiar reason for using locomotive power on railroads connecting lines of

canal, except that the trade on such lines is, from many causes, more irregular and uncertain than on continuous railroads, and that the use of locomotive power, so far as the profile of the railroad may justify its introduction, enables us to provide an extra power to meet any exigencies of the trade; without incurring any further expense, when the engines may be unemployed, than the interest on their cost.

The next inquiry of the committee is,—“Would it, in your opinion, be practicable, by a rigid enforcement of by-laws and regulations, to make either of these roads (connected, as they are, with the lines of canal,) valuable as a public highway to the State, and to the districts of country which they are intended to accommodate?”

In reply, I would observe, that I do not think it can often be advisable to make any railroad, however short, a public highway; because, a company possessing an exclusive privilege of transportation, and bound to transport whatever may be offered it, may accommodate any given amount of trade, with a smaller disbursement for power, whether that power be locomotives or horses, and a smaller investment in cars and carriages, than would be required to insure the same amount of accommodation to the public, if transportation be effected by common carriers or individuals. A few considerations will suffice to make this apparent. Suppose the business of transportation placed in the hands of a company, the whole amount of trade on a railroad ascertained, and the maximum transportation required in a given period known. A sufficient amount of power and an adequate number of cars and carriages may be procured, and no more. The necessary shops being erected, and skilful workmen provided for repairs, these last are effected economically, promptly and properly. Presuming the capital invested to be diminished, and the power employed, the number of persons occupied, and the expenditure incurred for repairs, to be lessened, the cost of transportation may obviously be reduced; and a company, although bound to transport, without the least delay, every thing which may be offered it on a railroad, may afford to do so at a lower rate than individuals possibly can.

If, however, locomotive power be looked to on the Philadelphia and Columbia railroad, (and the reasons in its favor appear, from what has been said, to be decisive,) it seems to follow, necessarily, that the railroad cannot be a public highway. Setting aside the difficulties, and, I might add, the impracticability of adopting such a police, and enforcing such by-laws and regulations as would in that case be necessary, other considerations lead to the conclusion that, even were it practicable, there would be no advantage in transportation by locomotives on a public highway.

To make use of locomotives on a line of railroad, it is necessary that an adequate number of engines should be provided, to guard against danger of delay from accidents or other causes; that warehouses, depots, engine-sheds, and water stations, should be erected; that there should be shops with competent workmen, at different points on the line of railroad, to effect repairs without delay, and to keep the engines, cars, and other vehicles used on it, in the most perfect order. It is evident that no individual would be willing to make the permanent disbursement necessary to effect transportation advantageously with this description of a power, on a railroad entirely open; that if attempted at all, it would necessarily be also a charge to the producer, or owner, which would not be necessary under such a system as would afford to an individual or a company, a guarantee of a regular and permanent business, correspondent to the outlay which would be necessary to accommodate it effectually.

Different, but not less forcible reasons, make it, in my opinion, very unadvisable to leave it to private competition to provide the means of transportation on the Alleghany Portage. These reasons are given in some detail,

in a report which I had the honor to make to the board of canal commissioners, in December, 1829, and to which I beg leave to refer the committee. It is true that, on the Portage, the same advantage can scarcely be expected from the use of locomotive power, as on the Philadelphia and Columbia railroad; but, on the other hand, if the views taken in that report be correct, a large diminution may be made in the amount of stationary and locomotive power, and in the number of horses which would be requisite, and an accommodation given to an irregular trade, which could not be effected by leaving it open to the principle of private competition.

A view was taken in the report referred to, which it may be proper to express in more detail—this is, “that should transportation on the proposed railroads be effected by agents or responsible lessees of the Commonwealth, the objections which have been made to the Pennsylvania line of communication, as presenting, in its portage, dangers of delay and uncertainty, may be in a great measure avoided.”

Should the railroads in question be public highways, it is not believed that any competition would insure an adequate amount of power, and a sufficient number of cars for transportation, to avoid delay during those seasons of the year when the trade on the canals would be most active; and if it were otherwise, as there can be no obligation on any particular carrier to transport what might be offered him, it would be necessary for an owner sending produce or merchandize by the canal, to accompany it, or to engage the services of an agent on whom he could depend, at the point of transshipment, to forward it. It would be otherwise, under either of the arrangements which have been suggested; it would be only necessary, in either case, to consign it to the care of the transporting agent at Columbia, or at either of the points of termination of the Alleghany Portage, as the case might be, and the articles consigned would, as a matter of course, be forwarded without delay or risk, to the proper address.

The perfect facility and certainty which may be given to the largest business, under the arrangement proposed, may be judged of from the accommodation afforded by the Manchester and Liverpool railroad. On that railroad, a trade and travel so far unexampled, and certainly beyond what may be anticipated for many years on any line of railroad in this country, are accommodated daily without the least delay, interruption or embarrassment, on two tracks of rails; and the line (to use the expression of the board of directors) appears ordinarily “almost a desert.” Indeed, under proper regulations, there appears to be no limit to the business which a double track of railroad, under proper regulations, can accommodate. In this respect, the most spacious canal cannot compare with it, because the capability of this last is necessarily limited by the number of boats which can be passed through its lock of greatest lift in a given time. It is not, however, hazarding too much to say that, with trade very inconsiderable in comparison with the present trade of the Manchester and Liverpool railroad, the most serious embarrassments might be anticipated on a railroad on which transportation should be effected by individuals.

The third inquiry of the committee is, “would you recommend that the Commonwealth, by its officers, should become the transporter; or that the improvement should be leased for a term of years to a company, that should be bound to transport at certain specified rates of toll and transportation?”

I should think the latter plan the more advisable. I can entertain no doubt that, after a very short period, an estimate, sufficiently accurate, of the amount of trade on each of the two railroads, might be made, to admit of an arrangement between the Commonwealth and a transporting company, which would be fair and equitable; and if certain rates of toll and transportation were fixed on by the proper au-

thority, that proposals would be made by a sufficient number of responsible individuals, or associations, for the privilege of transportation, to insure a fair compensation to the Commonwealth for the use of its railroads, and the most complete accommodation to the public. It would be desirable, that as much time as possible should be afforded to responsible individuals or associations, who might be disposed to submit proposals, to make the necessary inquiry and investigations, and to enable the agents of the Commonwealth to act advisedly in any arrangement which might be entered into. No delay in the use of the railroads, as soon as any considerable portion of either of them was in readiness, need result from this cause. The officers of the Commonwealth might proceed to procure the necessary locomotive engines, cars and carriages, and to make all other arrangements, in the same manner as if the Commonwealth were to be the transporter. If an arrangement was made with a transporting company, the engines and cars, if of suitable construction, would be received of the Commonwealth without loss. If no disposition was made of the railroads, the agents of the Commonwealth would then be prepared to effect the transportation of passengers and merchandise at the earliest moment after the roads, or any productive portion of them, were in readiness.

The fourth inquiry of the committee is, in the event of a lease to a transporting company, "what would be necessary, on the part of the Commonwealth, beyond the completion of the railroads, and what precautions should be taken to insure their preservation?"

This inquiry has been in part answered in what has already been said. In order to accommodate the trade on two important lines of railroad, constructed by the Commonwealth, extensive warehouses would be necessary at the points of termination of the Philadelphia and Columbia, and Allegheny Portage railroads, and probably others of a smaller size at many points on the line of the former. Workshops for the purpose of repairing both engines and cars, and water stations and engine sheds, would be necessary on each line. An adequate provision, in these respects, might be made by the Commonwealth in the first instance, with a view to more extensive arrangements, as the trade might require them.

In order to insure the preservation of the railroads, it might be made the duty of the transporting company on each road, to keep the line of railroad in good order, with permission to make such extensions, in the way of turn-outs, turning platforms, warehouses, and repairing shops, as experience might show to be necessary. Or an officer of the Commonwealth might be kept on each railroad, for the purpose of making such repairs and extensions.

In the former case, a company would, of course, expect any necessary disbursements for repairs of the railroad, or extensions, to be an offset in the payment of its annual dues. It would therefore be proper for the Commonwealth to guard against unnecessary or injudicious expenditure, by providing that no claims for repairs or extensions should be paid, unless the expenditure were made on the authority of some engineer of standing, and except on his certificate that the same had been judiciously made; or, the disbursements made by a company might be submitted annually to such an engineer, and subjected to any deductions which he might deem reasonable.

I believe, sir, that I have now replied to the different queries of the committee. I fear I may not have explained my views as clearly as I would have wished. I must plead, as my apology for the hasty manner in which they are presented, the necessity of leaving Harrisburgh to-morrow morning, and the little time consequently at my disposal. Such as they are, they are with great pleasure submitted; and I shall be gratified if they should prove of use to

the committee in the investigation they are making.

I have the honor to be, very respectfully,
your obedient servant,
M. ROBINSON.

THE IRON STEAMBOAT ALBURKHA.—This vessel is now in the river Niger, with the Quorra steamboat, and seems to have been the favorite of the two vessels since they departed on their interesting expedition. The advantages of iron vessels in warm climates are ably pointed out in a short extract we gave in our last number from Chambers' Journal; and these advantages seem in no wise exaggerated in the instance of the Alburkha, according to reports received from those embarked in her. This vessel was built by Mr. Laird, of Liverpool, for the purpose of navigating the shoal water of the river, and we understand that he has since constructed another for the interior navigation of Ireland. We have no doubt that these vessels, from their vast superiority over those of wood, and their durable quality, will speedily be numerous employed.—[Nautical Magazine.]

THE TROY STEAMBOAT.—By the following extract from the "Annual Register" for 1785—"Occurrences" p. 95—it would appear that this boat is not of a new construction. * The only difference between it and that here described, seems to be in the propelling power, the one being by steam and the other by sails.

"EDINBURGH, Dec. 3.—Yesterday an experiment was made at Leith on a vessel of a new construction, the invention of a gentleman of this city. She consists of a vessel of about sixty feet long and seven broad, cut into lengthways, the sections placed at about seven feet distance, and joined at top by strong beams planked over, so as to represent upon deck a vessel of the ordinary proportions, 60 feet by 15. The experiment fully answered expectation, notwithstanding one of the principal sails was by accident, prevented from being properly set. She was attended by the king's boat at Leith, which is reckoned a fast sailing boat of her size; but the new vessel outsailed her, and when the breeze increased left her about a mile in four. It was found that the above vessel is capable of carrying double the quantity of sail of one of the ordinary construction and of the same length and breadth, and has this peculiar advantage that she only draws two feet and a half of water."

The gain by this construction, as in the Troy boat, is in an increase of speed and a diminution of the draft of water.—[Nat. Gaz.]

* There is this other difference, that Mr. Burden's boat consists of two perfect cylinders.—[Ed. N. Y. Am.]

Internal Improvement.—The good people of the upper part of the State are putting their shoulders to the wheel in the great cause of internal improvement. The contemplated rail road from Athens to Augusta is now employing all their energies. The last Banner says, "our public spirited townsmen, Messrs. Williams, Camak and Shannon, returned a few days since from the counties of Greene and Morgan, where they had been for the purpose of procuring subscriptions to the stock of the Georgia Rail Road Company. Their success in those counties was truly gratifying to the friends of internal improvements, and places the entire success of the project beyond a doubt. We now look upon the matter as entirely settled. A very short time will witness the commencement of a system of internal improvement in Georgia, which must, at no distant day, place her proudly by the side of her most exalted and flourishing sisters."—[Georgian.]

[From the Journal of Commerce.]
SUPERIOR COURT—MAY 27.—JUDGE JONES, presiding. *Miles Burke against the Camden and Amboy Rail Road and Transportation Line.*—Damage laid at \$1000.

This was an action to recover damages for injuries done to plaintiff's goods, whilst being forwarded by defendants from Philadelphia to New York.

From the evidence adduced on the part of the plaintiff, it appeared that his son, Master Joseph Burke, left Philadelphia on the 21st of December last in the defendants' steam boat. On that occasion, Master Burke brought with him his own private wardrobe, a theatrical wardrobe, containing forty or fifty dresses, two violins and a trunk full of music in print and manuscript. The baggage thus designated exceeded in weight what passengers are permitted to carry without paying for it, and \$1 50 charged for the surplus.

The baggage of all the passengers in the steam boat was put in a wooden crate or crib, which remained on the deck of the steam boat until it reached Bordentown. The crate with its contents was then being lifted from the boat by a crane which stood on the wharf, and whilst it was suspended in the air, the strap of the crane broke and the crate fell into the water, where it remained about twenty minutes before it was raised out of it. Master Burke's baggage was in consequence entirely saturated with water. The value of the property before this accident, was estimated at \$200 for the two fiddles, \$300 for the music, and from \$1000 to \$1600 for the dresses, all of which articles were considerably injured, and some of them rendered altogether useless by their immersion in the water.

In bringing the action, the plaintiff regarded the defendants as common Carriers, and on that ground sought to render them responsible. They also endeavored to show that the defendants were guilty of negligence in not having sufficiently manned the rope before the accident, and having used it for too long a period without repair or renewal. The defendants admitted that the rope was not calculated to last more than a year, and it had been nearly eight months in use when the accident occurred. When the rope broke, a thicker one was substituted in its place, which the plaintiff maintained was a tacit admission that the first rope was not sufficiently strong.

On the part of the defence, Master Burke was cross examined as to his age, and how the profits of his profession as an actor were applied by his father.

To these questions he answered that he did not consider himself more than 15 years old, that he had been an actor during the last ten years, and was altogether ignorant how his father applied the profits derived from his [Master Burke's] acting.

The object of the defendants' counsel in putting these questions, was to show that the property on account of which this action was brought, had been purchased with the profits of Master Burke's acting, and also with a design to show that these profits were received and retained by the plaintiff merely in trust for his son;—in which case the present action should have been brought in the name of Master Burke's guardian.

The Court remarked that the father was entitled to his son's earnings, and unless it could be shown that his father had invested those earnings in his son's name, or had made a written agreement on the subject, the counsel's objection would not hold good.

It was then contended that the public notice given by the defendants in their advertisements, &c. that all baggage should be carried at the risk of the traveller, rendered the present case different from that of common carriers, and prevented the defendants being liable unless they had neglected to provide proper and sufficient means of transport. That in the present case, the sufficiency of transport having been provided, depended whether the crane was sufficient for the purpose of raising the crate from on board, and to prove that it was, several witnesses were called, who deposed that the strap attached to the crane was formed of a rope 4 1/2 inches thick, which was sufficient to raise three or four tons; and that the crates of goods in the steamboats never exceeded or perhaps amounted to 3000 lbs. weight, and were more generally about 23 cwt. The strap of the crane was also served or twined over, as ropes are done in ships, and after it broke, no natural defect or injury from time or the weather could be perceived in it, nor could its breaking be in any way accounted for except by attributing it to pure accident.

It was also shown that Master Burke had frequently travelled on this line before, and had been informed that the proprietors would not be answerable for any injuries done to passengers' baggage or losses which they might sustain.

These were the principal points urged on the part of the defence.

The Court summed up the evidence and commented on it, and advised the jury, in order that the law points involved in this case might be considered hereafter, to find for the plaintiff, on the ground that the defendants were common carriers, and therefore liable for the losses sustained by the plaintiff. The jury would also find a special verdict relative to the question of negligence, and if by possibility they found a verdict on both points, it would probably stand good.

The jury returned a verdict of \$500 damages and 6 cents cost.

And that there had been no negligence on the part of the defendants.

Counsel for the plaintiff, Messrs. Graham—for the defendant, Mr. Anthon.

Animal Mechanics, or Proofs of Design in the Animal Frame. [From the Library of Useful Knowledge.]

(Continued from page 337.)

PART II.

Showing the Application of the Living Forces.

Amongst the least informed people, and in remote villages, there are old laws and rules regarding health, sickness, and wounds, which might be thought to come from mere experience; but they are, on the contrary, for the most part, the remains of forgotten theories and opinions, laid down by the learned of former days. Portions of knowledge, it would appear, confined at first to a select part of society, are in the progress of time diffused generally, and may be recognized in the aphorisms of the poor. These are traced to their source only by the curious few, who like to read old books, and to observe how that which is originally right, becomes, through prejudice and ignorance, distorted and fantastical.

If a very little exact knowledge of the structure of our own frames were more generally diffused, charity would be advanced, empirics could hardly maintain their influence, and medical men might have a further motive to desire professional eminence.

Men suppose that the knowledge of their own bodies must be a science locked up from them, because of the language in which it is conveyed; or they take away their thoughts from it, as from the contemplation of danger, unwilling to survey the slight ties by which they hold their lives. They are like persons for the first time at sea, who shudder to calculate how many circumstances must concur to speed the frail vessel on its voyage, and how little is between them and the deep. It is then a mean and timid spirit that shuts out from our contemplation the finest proofs of Divine Providence. Galen's treatise on the uses of the parts of the human body was composed as a hymn to the Creator, and abounds in demonstrations of a Supreme Cause; and when Cicero desires to prove the existence of the Deity from the order and beauty of the universe, he surveys the body of man, deeming nothing more godlike, as marking man's superiority to the brutes, than the privilege of contemplating his own condition, since it teaches him the ways of Providence, from a knowledge of which come piety and all the virtues.

Although we are writing under the title of *Animal Mechanics*, the reader must be aware that we cannot proceed much farther on mechanical principles alone. At least, before we have it in our power to illustrate particular parts of the animal frame by reference to those principles, we must have the proofs before us that we are considering a living body. It is the principle of life which distinguishes the studies of the physiologist from the other branches of natural knowledge. To lose sight of this distinction is to tread back the path, and to engage once more in the vain endeavor to explain the phenomena of life on mechanical principles. We have taken mechanics in their application to mechanical structure in the living body, because they give obvious proofs of design, and in a manner that admits of no cavil. Yet, although those proofs are very clear in themselves, they are not so well calculated to warm and exalt our sentiments

as these which we have now to offer, in taking a wider view of the animal economy.

In entering on the second department of this treatise, the reader may be startled at the subjects of discussion, but this comes also from ignorance of their nature. Much may be learned from the observation of things familiar. Their perpetual recurrence banishes reflection respecting them, but it is the business of philosophy to make us alive to the importance of that which we have been accustomed to from childhood, and have therefore long ceased to observe with attention.

In the first chapter of this second part we shall continue to examine the operations of the animal body, independently of the agency of the living property: we shall consider it as a mere hydraulic machine. Following the blood in its circle through cisterns and conduit pipes, we shall point out the application of the principles of this science, as we formerly did those of mechanics, and so arrive at the like conclusions by a different course. And as we before found every muscular fibre adjusted with mechanical precision, so now we shall find every branch of an artery, or of a vein, taking that precise course and direction which the experience of the engineer shows to be necessary in laying the pipes of an engine.

Having thus surveyed the mechanical operations of the animal body, and the course of the fluids conveyed through it, on hydraulic principles, we shall consider ourselves as having advanced through the meaner to the higher objects of inquiry, and proceed to show how the principle of life bestows different endowments on the frame-work; how motion originates in a manner quite different from that produced by mechanical forces; how the sensibilities animate the living properties of action; how the different endowments of life correspond with each other, and exhibit power and design in a degree far superior to any thing that we observed in the mechanical adjustment of the parts or, the circulation of the fluids.

CHAPTER I.

THE CIRCULATION OF THE BLOOD UPON THE PRINCIPLES OF HYDRAULICS.—In tracing the course of the circulation of the blood, it is natural to inquire how far the system of reservoirs, pipes and valves, which form the apparatus for conveying it, are constructed on the principles of hydraulics.

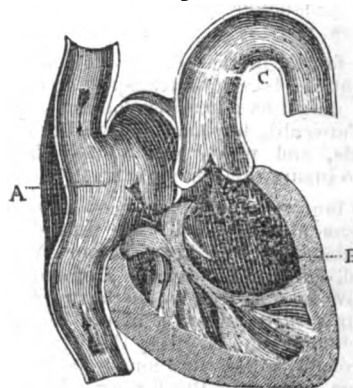
We find this difficulty in the outset, that the vessels containing the blood are not rigid, like those the engineer employs in erecting hydraulic machinery. Instead of resembling pipes which convey water, and which receive the force of gravitation on them, they have both elasticity and an appropriate living power. The artery, the tube which conveys the blood out from the heart to the body, has a property of action in itself. Its elasticity and muscular power must derange those influences which we study in pure hydraulics.

There is to be found, notwithstanding, a great deal that is common to both, when we compare the tubes of an animal body with the hydraulic engine; the capacity of the vessels; the increase or diminution of their calibres; their curves; the direction of their branches—all these ought still to be on the same principles on which experience has taught men to form conduit pipes. We ought not to be indifferent to these proofs of de-

sign, because we acknowledge that an infinitely superior power is brought into operation in the animal body, and which is necessary to the circulation of the blood. It renders the inquiry more difficult, but it does not obscure the inferences drawn from the consideration of the whole subject.

We shall first present to our readers the simplest form of the heart. It is not necessary to detail the more complicated structure of the human heart, where, in fact, two hearts are combined; the fibres of the one continued into the fibres of the other, and the tubes twisting round one another so as to present the form which is familiar to every body. Although there are four intricate cavities, seven tubes conveying the blood into them, and two conveying it out of them, we shall, for the purpose of considering the forces circulating the blood, and comparing the living vessels with pipes, present the heart and vessels as simple; yet with perfect truth, being, in fact, the heart and vessels of animals of more simple structure.

Fig. 1.



The action of the heart is this: the blood returns from the body by veins into the sinus, or auricle,* A, and distends it; this sinus is surrounded with muscular fibres; by the distention or elongation of these fibres they are excited, and the sinus contracts and propels the blood into the ventricle B. The ventricle is, more muscular; it is, in fact a powerful hollow muscle; it is excited by the distention, and contracts and propels the blood into the artery, C.

We understand, then, that every heart must, at least, consist of two cavities alternating in their action; that the vessel which carries the blood to them is called a vein; and that the vessel which carries the blood out from them is the artery.

The first thing that strikes a person examining the heart is the extraordinary intricacy of the cavities, from the interlacing of its muscular fibres, and he naturally says that they appear ill calculated for conveying a fluid through them. There is an attraction between fluids and solids, he might observe, and this attraction is increased by the extension of the surfaces of the pillars and cords which he sees in the interior of the heart.

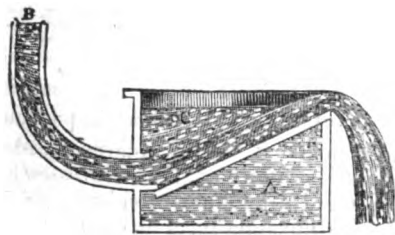
We must remind him that the blood is coming back from the body, having performed very different offices, in different parts, and has parted with different properties in the several organs it has supplied. There is, in that stream of blood which enters through the vein, a new supply of fluid,

* Auricle, from *auricula*, the flap of the ear, is a name given to the sinus, because a corner of it hangs over like a dog's ear.

which has come by digestion, the material for making fresh blood, as well as that which has run the circle. These two fluids must be thoroughly mixed together, and no doubt this is one of the offices provided for by the intricacy of the interior of the heart.

Again, looking to the recesses of the cavities formed between the fleshy columns, and behind the valves, we might suppose that the blood would remain there stagnant. There are cavities, or recesses, too, in the remote parts of the circulating vessels, where we might suspect that the influence of the stream would not be felt, and a stagnation might take place. But there is attraction between the particles of fluids, as well as between the fluids and their containing tubes. Let us see then how, in this figure, a stream of

Fig. 2.



water, carried through a cistern of water, will, by its friction, draw after it the water in the cistern, and carry it above its natural level, and over the side of the vessel.

The stream entering the reservoir, A, by the pipe, B, carries with it all the water, C, which stands above the level of its upper surface. By this we see that the stream of blood entering into the heart, even if its cavities were not emptied at each impulse, as some contend they are, would draw out the blood from its recesses, so that no part could remain stagnant, but, on the contrary, all would be carried in eddies round the irregularities, until they took the direction of the great artery, in which they would be perfectly combined.

The next thing to be noticed partakes of the nature of a mechanical provision—we mean the action of the valves.

We must here remark, that the opening into the ventricle is very different from that which leads out of it, the latter being much smaller. Medical writers describe this as if it were nothing to them, and a mere accident. But it must be recollected that a stream of water entering a reservoir is in a very different condition from that which is going out of it; it is on this principle that the mouths (*ostia* is the anatomical term) of the ventricle are differently formed, and it is this difference which makes the structure of the valves which guard those passages so dissimilar and so appropriate. Without attention to this we should follow our medical authorities, and call this variety in the mechanical adaptation a mere playfulness in nature. It is more agreeable to us to see a precision of design visible at the first step of this inquiry.

The valves of the heart are regular flood-gates, which close the openings against the retrograde motions of the blood. They are not all of the same mechanical construction, and their difference deserves the reader's attention as proving design in this hydraulic machinery.

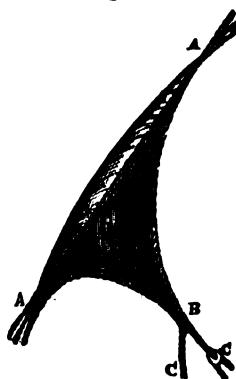
The valve which we have first to describe closes the opening betwixt the auricle, or sinus, and the ventricle, and prevents the

action of the ventricle propelling the blood back again into the auricle.

It is a web, or membrane, resembling a sail when bagged by the wind. The blood catches the margin of this membrane, and distends it as the wind does the stay-sail, or gib, of a vessel, which it much resembles, being triangular and pointed. There are three of these membranes, and the valve is called *tricuspid*, or three-pointed. Three membranes, then, of this kind, combining and being floated back upon the mouth of the opening, effectually close it.

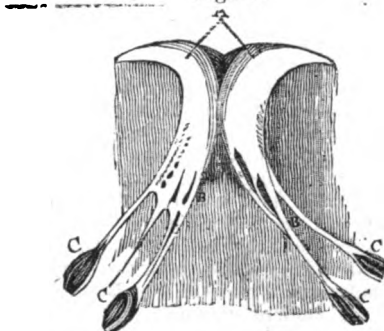
The illustration of the action of these valves by a sail is so perfect, that if the reader will have patience to attend to those little contrivances which the mariner finds necessary for strengthening his canvass, and giving to it the full influence of the wind, he will have an accurate idea of the adjustment of these floating valves.

Fig. 3.



To carry on the comparison: one edge of the stay-sail is extended upon the stay, A A, and tied to it by *hanks*. The edges of the sails, called the *leeches*, have a *bolt-rope* run along them; and on the edge where it is attached, the canvass is strengthened by being hemmed down or tabled. In the same way as the foot of the sail, or lower margin, is strengthened with the bolt-rope, just so are the valves strengthened at their edges and their corners. Where the two ropes join in the loose corner of the sail, they form a clue—a loop to which tackle is attached; the valve has such a corner so strengthened, and has a cord attached. The corners of the sail are strengthened by additional portions of canvass called *patches*; so are the valves strengthened where their tendons are

Fig. 4.



infixd. To the corner or clue, B, ropes are attached which are called the *sheets*, C C. These being drawn tight, spread out the foot of the sail to one side or the other, according to the direction of the wind, and the tack the ship is on; the valves have also their tackle; and, in short, we shall find a resemblance to all the parts of a sail in the valves of the heart.

One edge of the triangular valve is tied to the margin of the opening, as one of the leeches of the sail is attached to the stay; the opposite corner is loose, and floats, as the sail does in tacking, until the blood, bearing against it as the wind bears against the sail, bags and distends it; the corner is then held down by tendons, for there are cords attached to the corner of the valve, as well as to the corner of the sail. These the anatomists call *cordæ tendineæ*, B B, which in their office have an exact resemblance to the ropes called the sheets of the sail. They are delicate tendons attached to the margin of the valve, and they prevent the margin from being carried back into the auricle.

INDIAN RUBBER WATER-PROOF.—This substance is every day becoming of increasing importance. For harness and various other farming and domestic purposes, it will at no distant day be used. The following is from the Ohio State Journal:

Having heard much said of late in favor of Jewitt's water-proof, as rendering leather perfectly tight, I witnessed an experiment on Saturday last, showing the improvement of the leather as to its durability; and were there not a number of the most respectable citizens present, I should hesitate to state the fact and publish it to the world. Two pieces of leather, of equal thickness, were tried upon a grindstone, under a pressure of a weight of 12 lbs. In the first place, the leather in its natural state was placed upon the stone, which was revolved 1500 times; then the piece saturated underwent the same operation 3000 times; and when compared, it was found not to be so much worn as the leather in its original state. From the test made, I have no hesitation in giving it as my opinion, that leather thus prepared will last twice as long as that in its original state. When it is considered that in addition to its rendering leather perfectly impervious to water, it adds 100 per cent. to the wear, its value to the American people is almost incalculable.

P. H. OLMSTED.

Columbus, March 18, 1834.

From the Eclectic Journal we extract the following:

In our former notices of this valuable article, we omitted mentioning particularly its beneficial applicability to all kinds of leather harness. It could not fail to have been observed by every individual who has had the opportunity, that those parts of harness composed of leather are, in general, injured infinitely more by wetting and drying, both by rain and sweating of the horse, than by friction or actual wear. By wetting and drying, the leather becomes hard and unpliant, in which condition it cracks and breaks. But let the harness be saturated with the water-proof, and neither water nor sweat can penetrate it, and the leather must remain as soft and pliable after exposure to wet as before. This will certainly render the harness more durable, as well as less liable to chafe or gall the horse.

In conclusion, we will repeat the suggestions of Col. Jewitt, that his composition will be equally as applicable to wood as leather, and by excluding the water from its pores, vastly increase its durability. If future experiment confirms this suggestion, as we have strong reason to hope it will, the advantages which hydraulics, and particularly the shipping interest, will receive from this discovery, will be incalculable.

THE CHINESE WALL.—According to a statement in the "Morgenblatt," the celebrated Chinese wall was erected 213 years before the birth of Christ, against the Mongolese. It is 714 German miles long, 14 feet thick, and 26 feet high; so that with the same materials, a wall, one foot in thickness and 23 in height, might be carried twice round the whole world.

YEARS.—The word Year is purely Saxon, and is supposed by some to be derived from *æra*: whilst others deduce both words from the Greek *ear*, or Latin *ver* (Spring); because many of the ancients were in the habit of dating the commencement of the year from spring. In the Hebrew, Greek, and Latin languages, the word year is expressive of a ring or circle. The Egyptians also represented it by a snake placed in a circular position, with its tail in its mouth; whence, perhaps the name of the *Zodiac*, or that *imaginary* circle which is made by the sun in the heavens, during the twelve months. The time in which the sun performs its journey through the twelve signs of the Zodiac comprehends 365 days, 5 hours, 48 minutes, and 48 seconds, and is therefore styled the Natural, Solar, or Tropical Year. The Sidereal, or Astral year, is the time which elapses from the sun's passage from any particular fixed star, until its return to it again, and is just twenty minutes and twenty-nine seconds longer than the natural or solar year. The Lunar year consists of twelve lunar months, or that period during which the moon passes twelve times through its various phases, or changes. The common or civil year, in use with us and established by law, contains 365 days during three successive years, but in each fourth year an *intercalary* or additional day is inserted, in order to make up the number 366, such additional day being considered equivalent to the time lost by not counting the five hours and forty-nine minutes at the end of each of the four years, from one Bissextile or Leap year to another. The word *leap* sufficiently explains the act of passing over the hours in question. This plan was invented by Julius Cæsar, or by Sosigenes, the Egyptian mathematician, who assisted him in rectifying the Calendar. The additional or *intercalary* day is with us always placed in the month of February, which consequently in *Leap Year* consists of twenty-nine days, the usual number being twenty-eight. Cæsar placed it in the month of March, by reckoning the sixth day of the calends of that month twice over, hence the term *Bissextile*, from the words *bis* (twice) and *sex* (six), or *sextilis* (sixth day). But by the Gregorian alteration, the fourth year coming at the close of a century is not a leap year, unless the number of hundreds be a multiple of four. Thus 1600 was a leap year, 1700 and 1800 were not, 2000 will be. The reckoning of time by the course of the sun or moon was attempted in various ways by different ancient nations; but they, finding that their minor divisions of time did not correspond with the courses in question, endeavored to prevent confusion by ordaining a certain number of days to be *intercalated*, or inserted, out of the common order, so as to preserve the equation of time. The *Egyptian* year (as used by Ptolemy) consisted of 365 days, which were divided into twelve months of thirty days each, besides five *intercalary* days at the end. The *Egyptian Canicular*, or *natural* year, was computed from one *heliacal* rising of the star Sirius, or *Canicula*, to the next. By the regulation of Solon, the ancient *Greek* year was *lunar*, and consisted of twelve months; each containing thirty and twenty-nine days, alternately; and, in every revolution of nineteen years, the third, fifth, eighth, eleventh, sixteenth, and nineteenth, it had an *intercalary* month, in order to keep the New and Full Moons to the same seasons of the year. The ancient *Jewish* year was the same as the *Greek* one, only that it was made to agree with the Solar year by adding eleven and sometimes twelve days at the end; or an *intercalary* month when necessary. The modern *Jewish* year consists of twelve lunar months generally; but sometimes of thirteen, that is, when an *intercalary* month is inserted. The *Turkish* year consists of twelve lunar months of thirty and twenty-nine days alternately, sometimes of thirteen. The ancient *Roman* year, as settled by Romulus, was *lunar*, but contained only ten months, which were irregular, and comprehended 304 days in all; being a number fifty

days short of the true *lunar* year, and sixty-one days of the *solar*. Romulus added the requisite number of days at the end of the year. Numa Pompilius added two months, making the year to consist of 355 days, thereby exceeding the *lunar* year by one day, but being short of the *solar* one by ten days. Julius Cæsar, during his third consulship, and whilst he was Pontifex Maximus, or high priest of Rome, reformed the calendar by regulating the months according to their present measure, and adding an *intercalary* day every fourth year to the month of February; but he being assassinated before his plan could be fully brought into operation, the Emperor Augustus perfected and established what his kinsman had begun. The *Julian* year, which consisted of 365 days and 6 hours, was, however, still incorrect; for it was found to be too long by about 11 minutes, which in 131 years would be equal to one day; consequently, there was a further reformation of the calendar by Pope Gregory, in the 1582. He cut off eleven days, by calling the fourth of October the fifteenth. This alteration of the style was gradually adopted in the several countries of the European continent; but in Russia, in some of the Swiss cantons, and in the countries of the East, the *old style* is still preserved. The Parliament of England adopted the *Gregorian* plan, in 1752, by enacting that eleven days should be omitted that year, all dates therefore, previous to 1752, are said to be according to the *Old Style*: whilst those since that period are deemed to be according to the *New Style*. In 1800, which was properly a bissextile, or leap year, the *intercalary* day was omitted; hence the difference between the old and new style is now twelve days. The *Gregorian* regulation does not absolutely preclude all error in future; but that is likely to be so trifling, as not to require particular attention. The beginning of the year has by no means been the same in different ages and countries. The Chaldeans, the Egyptians, and the Jews, in all civil affairs, began it at the *autumnal equinox*. The ecclesiastical year among the Jews, the common year of the Persians, and of the Romans under Romulus, commenced in spring: a mode still followed in many of the Italian states. Both the *equinoxes*, as well as the *summer solstice*, were each the commencing date in some of the states of Greece. The *Roman* year, from the time of Numa, began on the calends of January; the Arabs and Turks compute from the 16th of July; the christian clergy formerly commenced the year on the 25th of March—a method observed in Great Britain, generally, in civil affairs, until 1752; from which period our civil year has begun on the 1st of January, except in some few cases, in which it still commences on the “Day of Annunciation,” or the 25th of March. In Scotland, the year was, by a proclamation, bearing date so early as the 27th of November, 1599, ordered thenceforth to commence in that kingdom on the 1st of January, instead of the 25th of March. The English Church, still, in her solemn service, renews the year on the *First Sunday in Advent*, which is always that next to or on *St. Andrew's Day*. Our ancestors, after the establishment of Christianity, usually began their year at *Christmas*, and reckoned the commencement of their *æra* from the incarnation, or birth of Christ. William the Conqueror, however, introduced the method of substituting the first year of his own reign for the Christian *æra*. At subsequent periods, the English reverted to the ancient custom; but all State proclamations, patents, charters, and acts of Parliament, have continued to be dated from the commencement of the reigns of the respective sovereigns, with the addition of the words, “and in the year of our Lord,” &c. The Russian government did not adopt the Christian *æra* until the time of Peter, in 1725; their previous practice had been to reckon from the world's age, or the *year of the creation*.

CREAM OF TARTAR, rubbed upon soiled white kid gloves, cleanses them very much.

AGRICULTURE, &c.

[From the New-York Farmer.]

Cultivation of Grape Vines in Pots. By the EDITOR.

Very considerable attention is now being paid, by gardeners in England, to the cultivation of the vine in pots. In some instances the long cuttings from large vines are curled around the inside of the pot, leaving above the soil but one or two eyes, which, in consequence of the numerous roots that are made, speedily obtain a vigorous growth. By giving the vines a circular training, they will become quite ornamental, and take up but comparatively little space. By putting the pot containing the vine in another, and filling the space between them with soil, a uniform moisture may be easily preserved. To families living in towns and cities, the subject is of much importance; to the ladies in particular we recommend it. Mr. Mearns, gardener to the Duke of Portland, thus expresses himself in the Horticultural Register, on this method of cultivating them in England:

“By my method I shall introduce vines into any farmer's garden in the kingdom, where none had previously been; and at the expense of little besides ten or twelve lights of glass will insure him from 500 to 1000 fine bunches of good grapes the first season! If any one can boast the same, the fact has never been laid before the public, else it is likely I should have seen it. I go thus far, on purpose to raise a curiosity, and to excite every degree of emulation, knowing, that if such can be excited, the system will very soon discover itself to be most important to the country. The successful cultivation of the grape is certainly one of the simplest branches of the art, both in pots and in borders; if a vine be left entirely to itself it will soon become fructiferous, after having been for years under the most rigid discipline to little purpose. A vine, excited to a high degree of luxuriance, is neither the most fruitful nor produces the finest or best grapes. I have seen Hamburgs, from three to six and eight pounds weight each bunch! The vines comparatively *weak*, and vine border very shallow, and by no means rich!

“As curiosity will be created by such a remark, I beg to state that such grapes were repeatedly produced by a Mr. Minnett, formerly gardener to Mrs. Powes, Berwick House, near Shrewsbury.

“I have there seen bunches of Hamburgs from fifteen to sixteen inches long, and from eight to ten inches across the shoulders; the berries all of a perfect black, as close as they could grow together, and the size of a boy's large marbles.

“I have coiled into pots this season upwards of a hundred branches; forty and more of which I have got into action. I shall continue to introduce others till the middle of June; if I can *starve* them into dormancy by cold bleak exposure, or by burying them in clay-cold murk graves or caves! or by being sunk under a wall on a north aspect. I am begging of all my friends the long branches which they cut out in pruning, and as far as Somersetshire, Worcestershire, Staffordshire, &c. &c., so that I expect, in a short time, to have a stock of plants sufficient to produce 1000 bunches the first season.”

"Put in your cuttings of young wood, in coils of three, four, to five feet, blinding all the eyes, except the two uppermost. I choose to leave two eyes till the finest gets the lead, and is safe, for fear of accident to one alone; I then slip the weakest off. If placed into a bottom heat, and the eyes be buried about an inch or two in the pots, in the course of coiling, by the time the best eye appears above the soil, as strong as the bud of a fine asparagus! the whole coils beneath will be completely occupied with young active roots; and by the time the shoots are four feet long, the pot will be a perfect mat of those eager feeders. Then shift and top the shoot and never leave on any laterals; plunge as before into a fine bottom heat and encourage the main top-most eye alone to push; and lead it on, but without laterals, till it is again four feet long; when, if the pot is full of roots, shift, top it as before, and encourage again the uppermost eye only to start; and by the time it is another four feet, if not over-potted before, it will require a third shifting. If required, you may stop at every four feet, five or six times; but three shiftings will be found enough for the season; and you had best not suffer it to reach above from twelve to twenty feet of clear bearing wood. At the end of the season you will have shoots one inch and a half diameter, and with fine bold eyes, and full of fine set bunches for the next season!

"You will readily perceive, that, by such an early and abundant accumulation of young vigorous roots, and by such a top and bottom management, it is no extraordinary miracle to have every cutting a fruit bearing shoot at one season's growth; and by a proportional coil of large older wood, it will be equally obvious to you how readily such will produce a fine crop the first season!"

"The extraordinary progress of my grapes upon the coiled vines, placed in a bottom heat, astonishes every one. In another season, when I have got my wood early ripened, I intend to start some in October, and to have plenty of fine ripe grapes by the middle of February. I have some at this time half grown, the branch being only cut from the vine, and placed in bottom heat 20th of November! 'Can such things be?' Yes, easily and simply so. I intend to keep some coilers as late as the middle or end of July, before they are excited, and then to place them in a bottom heat. The fruit, by doing so, will be perfectly ripe before the dull weather of autumn sets in, but not so with the wood; by which circumstance they will retain the leaves vigorously through the winter, and consequently the fruit will retain its plumpness till April or May!

"You will now say this is going too far, but it undoubtedly may be done. New ripe grapes in February, and plenty of old grapes till the end of June! There is little beyond the power of man, if he will but exert those faculties with which God has endowed him."

Uses and Cultivation of the Pie Plant or Rhubarb. By D. F. AMES. [For the New-York Farmer and American Gardener's Magazine.]

MR. FLEET,—America is blest with a favorable climate, and peopled by natives from all parts of the earth, who variously cultivate our various soil; and yet our markets are not so well supplied with fruit and vegetables as those of less favored lands. This arises, in part, from the very limited demand for any thing out of the common way. Animal food

is of a more heating and irritable nature than vegetable; consequently less adapted for our summer season. Indeed, at any time, the wholesomeness as well as luxuriance of our table is greatly magnified by these salutary additions. Among their number, I wish to call the attention of your readers to the Turkish rhubarb, *rheum raphaniticum*. This is a valuable plant, and only requires to be known to receive general cultivation; it has the important recommendation of presenting itself for the table, when few others for a similar purpose are to be had. The petioles or stems of its large fan-like leaf are the part to be prepared. When the leaf is fully expanded, cut it close to the main stem, remove the green top, then deprive the stalk of its outer skin by stripping it down, and not by cutting with a knife; then cut it in small lumps, not too thin, and either boil it in dumplings made of short paste, or bake it in tarts, using sugar, lemon, &c., to the taste. It is found greatly to improve the flavor of apple tarts or pies, by mixing it in the proportion of one-third to two-thirds of apples. The latter fruit having been kept through the winter generally loses its flavor, and becomes flat and insipid. But the good housewife will soon find a variety of ways to cook this delightful plant. I shall only add that it has the reputation of being very serviceable in aiding the discharge of bile, and conclude with a few remarks on its culture. The medical rhubarb is principally brought from the mountains of Tartary, and is the dried root of this plant. It grows there in great abundance upon the declivities of the mountains, preferring a light sandy soil, on the south side, but in the shade; therefore procure a place in a warm shady border of your garden, loosen the earth, *far and deep*, enrich the spot with some rich light soil, and place the root upon a small quantity of old stable manure, so that its top, before any leaves have started, be six inches below the surface; over the crown of the root, strew a little more manure and cover it with fine mould. In the spring, when the leaves begin to appear above ground, draw the earth round them, and when the stem of the leaf has attained the length of six or eight inches, they may be cut for use. The main stem will attain the height of six or eight feet. The root for planting may be obtained at the seed stores and nurseries.

As early as February or March, some growers of this plant put barrels or large boxes over the plants, and cover the whole with heating manure. Thus treated, they will grow very rapidly. Others let them stand in open warm situations, taking no other pains than keeping the ground free from weeds, and cut the leaves as wanted. They are propagated by separating the suckers or roots from the main stem. In a few years one plant will make a dozen or more.

D. F. AMES.

WASHING AND SHEARING SHEEP.—When we wash sheep in warm weather to cleanse their wool it does not injure them, but if cold, it does, and sometimes introduces the rot.

Washing common sheep's wool on their backs is the best method to prepare it for carding, that I have observed, if it is well done; and the best way to do this is to put the sheep in clean running water (to the number of 50 or 60) before we commence washing; this soaks, and dissolves the dirt in the wool, so that even merino wool is made much cleaner. (This we discovered by a merino sheep jumping out of a boat and going to shore, and when we washed it, the wool that had been

wet was considerably cleaner.) Then carefully wash them the common way.

Wool is much better, when shorn early, both for carding and wearing.

I have shorn my sheep from the 1st of 5th mo. (May,) to the 6th mo., (June,) and by several years' experience in carding wool, have found that the earlier wool is shorn the better it works in carding, even merino as well as common wool; because it is more elastic, and softer: but when wool is shorn late in the season, it becomes dead and harsh, and is subject, when carded, to nap: so that early shearing, keeping sheep in good order, and washing wool suitably, are material objects.

According to my observation, about the latter end of April and the first week in May is mostly warm dry weather; that if sheep were shorn about this time, their wool would card, and wear much better than when shorn late; and they do as well with me as when their wool was taken off late, having a suitable shelter.

The best method that I have observed of washing common wool after shearing is to put 8 or 10 lbs. in a tub of cold, soft water; let it soak 30 or 40 minutes, then rub it slightly and rinse it out; fill the tub with fresh wool as before, in the same water, and when thus done, rinse it in clean water, and shake it out loose for drying. Warm water takes the grease too clean, out of common wool for carding; and it makes it harsh, and is more or less subject to be fulled; soaking the wool dissolves the dirt, and this is all we want out of common wool; to rub it slightly, for wool may be fulled by rubbing it much, and wool should not be fulled, for that will cause it to nap in carding; to shake it out loose, for wool made loose and unconnected cards the best; it is best not to empty the water until done washing, because the oftener we wash in the same water the cleaner wool will be; for the grease in wool acts like soap, in cleansing it; on this account it is preferable to wash the locks first, before we wash that which is for more particular use.

Wool ought to be taken in before rain, for that injures it, by connecting, or interlocking the fibres; it also makes it harsh and compact.—[Ohio Aurora.]

CULTIVATION OF GARDEN SEEDS.—Without great care in raising seeds, many kinds of garden plants will deteriorate or become of mixed varieties. It is not only necessary to make an early selection of the very best plants for seed, but those growing under all the circumstances likely to produce the desirable properties. If planted near each other, particularly if they flower at the same time, they are sure to mix, and, in nine instances out of ten, produce inferior plants. Among the vegetables liable to hybridise are the brassica family, including cauliflowers, broccoli, cabbage, turnips, &c., and different kinds of peas, beans, cucumbers, beets, onions, lettuce, and corn. The latter, in particular, will, by the aid of strong winds, mix at a great distance. Those who grow seed for sale cannot be too careful.

QUICK SILVER IN TREES.—On reading the following paragraph, in the Genesee Farmer, the thought occurred to us that the infusion of mineral or vegetable preparations into the circulation of the sap of peach trees, infected with the yellows, might be attended with good effects.

"Mr. Garrigues states that a plum tree in his vicinity, which had for several years dropped all its fruit prematurely, had, since a hole had been bored into it, and a quantity of quick silver deposited therein, ripened its fruit, which had been so abundant as more than to supply the family of the owner."

NEW-YORK AMERICAN.

MAY 31—JUNE 6, 1834.

LITERARY NOTICES.

No. XXVI.

Peoria, Illinois, March.

I have gone through a variety of amusing and some vexatious adventures in crossing the country from Galena to this central place; but you have now been with me so long upon the prairies that I shall not fatigue you by detailing more of a traveller's passing mishaps and petty encounters. The great melting of the snows that detained me at Galena, was followed by a sharp frost, which, crusting over the swollen streams, made their passage very painful for the horses. In passing through the Winnebago swamp, we drove for the distance of a mile through water up to the chests of our horses, and so heavily coated with ice, that it was as much as the leaders could do to break a way with their fore feet. My fellow traveller, however, for I started with but one from Galena, proved to be an old campaigner and capital travelling companion, and we managed to extract some amusement from every occurrence, however annoying; and whether we were jolting over the frozen ground in an open wagon without springs or seats, or keeping the freezing night-wind away by stuffing our bed clothes in the crevices, as we shared a pallet together in some half constructed log edifice, the spirit of fun and good humor has been sympathetic between us.

About a day's journey from Galena, we passed over a reach of prairie, some 12 or 14 miles in extent, where my companion, who is a middle-aged man, was fortunate enough, a few winters ago, to be the cause of saving a great many lives. A rain of sleighs, holding more than a dozen people, among whom were several females, started immediately after breakfast to cross this narrow arm of the prairie; and though the distance was only as I have stated it, they contrived somehow to lose their way in the snow, and night closing in found them apparently as far from the house they were seeking, as when they started in the morning. They had, in fact, during a sudden flurry of snow, turned completely round, and, as my companion was the first to discover, were actually going backwards instead of advancing on their route. A council was at once held, and all except my friend were for still pushing forward, though the horses were worn down with fatigue, and several of the travellers already frost bitten or becoming torpid with cold. But my companion, who probably had more experience in such scenes than any of the company, immediately took command and ordered a halt, declaring that he would not move a step further, and warning them that they would perish should they not make use of the few moments of light that were left them to secure themselves for the night. Providentially every one yielded to him. The horses were turned loose, and the snow having been removed from a large space of ground, it was forthwith covered with buffalo skins, and the largest sleigh in the train placed inverted upon them. The whole company then, with the exception of my friend, crawled beneath the impending structure, while he remained outside and covered up the box with snow, shovelling it on with a piece of board. This exercise—which alone saved his life, while it ensured the safety of theirs—he continued till morning, when some of the horses having found their way into the settlements, the people came out and led the company to their homes. During the same spell of weather, if not on the same night, two waggoners and some oxen were frozen on the prairie, farther down the country, on a route which I have since passed. There were three of them in company, each with a team, hauling goods to some point on the Illinois. Finding their oxen gradually becoming stiff with cold, they determined to leave them and hurry on to a house. One of the three gave out before they had gone many miles, and his companions buried him in a snow bank; the second sank down on the road; and the third only succeeded in reaching a house and saving his life.—Part of the load of these poor fellows consisted

of blankets, which, had they known, it might have saved them. The incident struck me when told near the spot on a cold day, though not so much as a similar story which I heard when I first came upon the grand prairie in Indiana. It related to the fate of an emigrant who attempted to cross a broad arm of the prairie with his family, in an open wagon, on a very cold day. They were found stiff in the road, the horses frozen in their traces, and standing upright, as if petrified by some sudden influence, and the man leaning against the wagon, with a fragment torn from it in his hands, as if in the act of trying to make a fire. The mother sat upright, with an infant in her arms, but the children were curled about her feet in every position that an attempt to screen themselves from the cruel exposure could suggest. But these stories, of which I could tell you a hundred, begin now to lose their effect, as, with the gradual opening of spring I find myself approaching a milder region. The last day's travel has led along those sunny bottoms of the Illinois, where, even at this early season, the chattering of the parrot may be heard upon every side; and here and there I have delighted to observe a tender green stealing over those sheltered meadows beneath the retreating banks of the river, whose narrow limits and basin-like appearance answer so completely to my preconceived ideas of a prairie. The Illinois about 30 miles above this point expands into a fine lake, upon the banks of which Peoria is situated. The site is one of the prettiest for a town that I ever saw, and the approach to it, through alternate prairies and richly wooded bottoms, that fringe the lake with a vegetation of stupendous growth, and give glimpses of its sparkling waters and blue islets through festoons of vines that overhang the road for miles continuously, must in summer be like a scene of fairy land.

Peoria is about the geographical centre of Illinois, though by no means as yet the centre of population, which is still far to the southeast. This place is rapidly improving, and may very possibly become the future seat of Government. It has inexhaustible quantities of bituminous coal in its vicinity and commands an unbroken steamboat navigation with St. Louis. The adjacent country is very fertile. The soil, like that of Illinois generally, is better suited to the grazier than the agriculturist. It is composed of a black and rich mould, with a small admixture of fine silicious sand, and rests on soft and permeable clay without being interspersed with stone or gravel.—This formation, as is observed by Governor Coles in an excellent address before a scientific body in Illinois, whilst it is unfavorable to the existence of perennial streams and fountains, and impedes the plough of the agriculturist, and endangers his health by the creation of miasma, in the vicinity of the middle lands furnishes inexhaustible meadows to the grazier, and every facility for canals and railroads. The Illinois river was described by Gen. G. B. Clark so long ago as 1777, as "a natural canal passing through natural meadows;" and the facility with which branches might be made as the country requires them, is now very apparent. The route of the proposed canal (of which I have before spoken) to connect the waters of Lake Superior with those of the Gulf of Mexico, by a communication of only one hundred miles, commences at a point on the Chicago river, five miles above its mouth, where the water is 12 feet deep, and on a level with Lake Michigan: thence seven miles and a half to the summit level, which is 17 feet above the surface of lake Michigan, and five feet nine inches above the Deplaine: thence (for a ship canal,) down the valley of the Deplaine and Illinois, about 90 miles, with 175 feet descent to the mouth of the little Vermilion, four miles below the rapids of the Illinois river; at which point that stream is navigable for steamboats at all seasons.

Ten years, and \$40,000 have now been spent upon this work, and not a shovelful of earth, so far as I can learn, is yet removed from the soil. Let the New York merchants step in and make it, and the warehouses of Buffalo will be to St. Louis what those of New Orleans are at present. New York will have the whole trade of the Mississippi valley, and the vast regions of the Missouri will be tributary to her market. A canal boat that can navigate the lakes may then clear at Coenties slip and discharge her cargo at a trading post on the Yellow Stone. Such a canal would be to this Union what a cut through the Isthmus of Darien would be to the world. The one would draw St. Louis as near to New York as the other would India to Europe. It would be well indeed that Government should make it; but the means required are so slight in comparison with those invested in a hundred similar works

in different parts of the country, as to bring it easily within the limits of individual enterprise. The State of Illinois, judging from the progress already made, will not complete the canal for half a century to come. The want of capital is here so great as almost to seal up each outlet for enterprise, though they present themselves on every side; and our eastern capitalists are so completely ignorant of the prodigious resources of this region, that it may be long before the defect is supplied. Were the people in our rich eastern cities more familiar with even the geographical relations of this extraordinary region, I am convinced that more than one company would be formed, that would be eager to purchase from the State of Illinois, at a handsome premium, the right of making the canal and holding it in joint stock for a term of years. When people of capital and enterprise open their eyes to this matter, the work will be accomplished in three seasons, and as you may then take a steamboat at Buffalo and check a berth for St. Peters, a trip to the Falls of St. Anthony will soon be thought no more of, than is now an excursion to Niagara. Fishing parties will be made up at Islip for lake Pepin; and Hewitt will furnish port folios to tourists that wander away to sketch the awful scenery of the (now) remote "Thunder's Nest,"* while "the Teton of the burnt wood" will supply Jennings's larder with game, and Paulding's best Madeira be drank by gentlemen that shoot elk among the Dacotahs.

St. Louis, March, 1834.

Here I am, safely at last in the renowned city of San' Louis. Our route from Peoria, by the way of the flourishing towns of Springfield, Jacksonville, and Alton, through the small meadow-like and half cultivated prairies of Lower Illinois, was very agreeable; and in crossing one prairie of considerable extent, I had the pleasure of seeing it on fire on every side around me. The hour was near midnight, and the spectacle was magnificent beyond description. An illustration by Westall's pencil of The Rich Man in the Burning Lake, which I have seen somewhere, would give as near an idea of the scene as the painter's art could convey. In one place the prairie presented exactly the appearance of a broad burning pool, in others the flames swelled up like seas of fire, rolling the liquid element in solid columns over the land; and then, like the waves of the sea itself, when they break upon the shore, a thousand forked tongues of flame would project themselves far beyond the broken mass, and greedily lick up the dry aliment that lay before them. Our horses did not seem to mind the phenomenon at all, and we drove so near to the fire as to feel the heat very sensibly. But though we probably incurred no danger, it was almost startling at times to see a wall of fire as high as our horses' ears, in some places stretching along the roadside, while the flames would shoot to the height of twenty feet or more, when a gust of wind would sweep the prairie.

We had an accession of four or five passengers at Jacksonville, and I was not a little amused to find that out of six persons in the stage, we had four colonels; and when we chanced to stop at a tavern, where I saw a cartridge box and a musket, over the mantelpiece, I could not help remarking aloud, that it was the first symptom of the existence of a private, I had seen in the country. Some of the colonels looked a little sour, and the jest might not have passed off as easily as I could have wished it, had not my friend, who was also a colonel, entered my name on the tavern register by the same distinguished title, which, I presume, qualified me to speak a little *ad libitum* of militia deeds of arms.

The population seen in the last few days, seemed to be of a very mixed character: some were quakers, from Pennsylvania, and they had every necessary and comfort of life; others again, were miserable looking creatures, from North Carolina and parts of Tennessee, who lived with scarcely any labor, and kept a blanket suspended over their porch instead of a door—in log huts, that had been built for several seasons. At Alton, again I saw in their neat white houses, with their green venetian blinds—their tasteful piazzas and pretty enclosures, with newly planted shrubbery—sure indications of a New England population. The same, or even greater marks of improvement and superiority in their style of living, over the mass of emigrants hither, are manifest, I am told, wherever the English have established themselves in

* Pronounced *hauling*: a term universally used at the West instead of its northern synonyme "drawing." They have Shakespeare's authority for it—"I think oxen and wain ropes cannot *hale* them together."—TWELFTH NIGHT.

* A young officer of the first Infantry, who commanded an exploring party into this savage region, so called by the Indians, arrived from his tour while I was at Prairie du Chien. He described the scenery as possessing a desolate grandeur which words could not paint.

Illinois. I have missed all their settlements, by passing to the westward of them. But both here and in Michigan, I have always heard the English residents spoken of with respect and affection.

A few miles below Alton, on the Mississippi, I passed a deserted village, the whole population of which had been destroyed by the "Milk sickness." The hamlet consisted of a couple of mills and a number of frame houses, not one of which were now tenanted; but the dried weeds of last year choked the threshold of the latter, and the raceways of the mills were cumbered up with floating timber, while the green slime of two summers hung heavy upon their motionless wheels. Not an object but ourselves moved through the silent town; and the very crows themselves seemed to make a circuit around the fated place when they came in view of the thickly-sown burial ground on the skirts of the deserted village.

We were now on the famous "American bottom;" and I was really astonished at the prodigious size of the trees, and the magnificent vegetation which this region displays, but the scattered inhabitants looked far from healthy. At Alton we struck the Mississippi, and a few miles below we passed the mouth of the Missouri, where its white and turbid current could be seen rushing in among the Islands and staining the limpid tide of the Father of rivers far down the western shore, while for twenty miles below that clear stream still preserved its purity on the eastern side. Surely Father Hennepin was mistaken, when he called the streams above and below the Missouri by the same name! For the Upper Mississippi, except in its breadth and volume of water, bears but little resemblance to the Lower river; while the Missouri, as it tears through its muddy banks to drink that beautiful tide, soon gives its own turbulent character to the whole stream below, and even impresses its peculiar features upon the gulf in which it at last loses itself.

It was too late in the evening to cross when we arrived opposite to St. Louis, and I amused myself before retiring for the night, in listening to the sound of the church bells—the first I had heard in many a month—and watching the lights as they danced along the lines of the dusky city, and were reflected in the dark rolling river. We crossed in time for breakfast, and I am now tolerably established at the best hotel in the place.

THE WORKS OF MRS. SHERWOOD.—New York.—HARPER & BROTHERS.—Vol. 1.—Comprising the history of Henry Milner, a little boy, who was not brought up according to the fashions of this world.

The deserved success which attended the publication of a uniform edition of Miss Edgeworth's works; now so recently completed by her last admirable, every way admirable tale of *Helen*, has induced, we may presume, the same enterprising publishers to undertake a similar edition of the works of Mrs. Sherwood; devoted like those of Miss Edgeworth, to the improvement of her fellow creatures—tho' by the more immediate and direct intervention of religion.

Miss Edgeworth, without omitting the occasional introduction of religious sanctions to enforce moral precepts, mainly relies on the present and immediate advantage and happiness which flow from an observance of, and strict adherence to, truth and duty.

Mrs. Sherwood, on the other hand, constantly presents obedience to the will of God as the rule of action, which, from its superior sanctity and obligation, supersedes any appeal to, or reliance on, less exalted motives of action.

Together, these two writers—dissimilar in quality and yet both of great ability—have furnished materials of rare excellence for conducting moral and religious education.

Henry Milner has never before been republished complete in this country. It is not perhaps as attractive, upon the whole, as the *Lady of the Manor*, or *Rosabel*, yet it is attractive notwithstanding.

The number of volumes to which this edition will extend is not ascertained. Meanwhile, we hazard nothing, we are sure, in predicting ample encouragement to this new and meritorious enterprise of the Harpers.

A fatal spasmodic disease peculiar, I believe, to the Valley of the Mississippi. It first attacks the cattle, and then those who eat beef or drink milk.

THE LADIES COMPANION, No. 1.—New York: W. W. SNOWDEN.—Another monthly Magazine, "devoted to Literature and the Fine Arts." Truly, we are abundantly supplied with light reading, but whether, it is as advantageous as it is abundant, "may be well questioned." This is a well printed miscellany, of about 50 pages—double columns; and with a great variety of stories, tales, and anecdotes, selected and original.

A SYSTEM OF MODERN GEOGRAPHY, with an Atlas, by G. M. HUNTINGTON. Hartford: E. HUNTINGTON & Co. New York: R. B. HOLMES.—This is designed for schools and academies, and as a general geographical reading book. It is a general and rapid view of the outlines geographically, and historically, of marking incidents in each country. The United States of course occupy a large space in a book designed for American schools, but it does not exclude from notice any other country. There are wood cuts, representing peculiarities of different people, public edifices, &c. The maps in the accompanying Atlas are colored, and apparently accurate. The whole seems carefully and skilfully prepared.

CONVERSATIONS OF A FATHER WITH HIS SON, ON SOME LEADING POINTS IN NATURAL PHILOSOPHY, by the Rev. B. H. DRAPER. New York, N. B. HOLMES.—There is no excuse for ignorance now a days, though possibly the very facilities which exist for acquiring elementary knowledge on all subjects, may lead to a neglect of that arduous, systematic, and persevering study which alone can make really learned men. Meanwhile let us welcome all of good we can—and as such we consider this little volume—which explains practically and intelligibly the phenomena of matter, of the solar system, of colors, and other analogous wonders, for such indeed they never cease to be even to those who thoroughly understand all about their laws. This little book is, too, very well printed.

FRENCH READER, OR A STEP TO TRANSLATION, &c., by Jos. F. A. BRUF: New York—Sold by the publisher, 28 Murray street, and by the booksellers generally.—This is a second edition of a work, prepared by a practical man, whose wide and intelligent experience as a teacher, has taught him the difficulties most obvious and common among learners, and who in these pages, has applied himself to diminish or overcome them. There is also a treatise, well executed, on pronunciation, the accents, &c.

LAW OF REAL PROPERTY.—An Essay on the law of real property in New Jersey, by William M. Scudder, Esq., will, as we learn, be issued from one of the New Jersey presses, sometime during the summer. It is recommended by Chief Justice Horblower, of that State.

THE NEW ENGLAND MAGAZINE for June.—Boston J. T. BUCKINGHAM—clever as usual—and varied.—It flags not in spirit or in interest. We extract a short passage, on a familiar subject.

DUNNING.
"Shut, shut the door, good John, fatigued, I said;
"Tie up the knocker, say I'm sick, I'm dead."

Misery, they say, acquaints a man with strange bed-fellows; and poverty acquaints him with unwelcome followers. The word dun—what the thing is, we need not in these times define—is derived from a troublesome fellow, a collector of bills, named John Dun. Happy mortal, he has gained immortality, like McAdam, by giving his name to a science.—John Doe and Richard Roe have not such general celebrity. I detest the name, and I love not the thing,—though it is principally for my friends that my sympathies are awakened. The last case in which I had a personal interest,—and though I write for Magazines, be it promulgated that I expect no other,—is a present call from the printer's demon for copy. Take it, and away. "So, being gone, I am myself, again."

The Chinese are a wise people; their institutions are perfect,—the paternal government is better than the presidential. They have one law, by the adoption of which, we should be more relieved than by the restoration of the deposits, the re-charter of the

Bank, or [even] the abdication of the President. It would be a great benefit to the public, and the very thing for me. In China, there are three hundred and sixty-four days of rest,—days wherein no one carries to another bill or note,—days on which, protests are inoperative, and duns illegal.

There are, however, countries in the East less enlightened than China, and also in the West. In "Merry England," what are the records of the Fleet, especially in the last century, but a book upon the misfortunes and imprudencies of genius. Fielding was almost at home in it; descriptions of a prison, are his most familiar and graphic chapter. He describes like a man who was confined to his subject; like a wight who has no view of the world but what comes through a grated lattice. The very light of the sun on his cold floor, was chequered with bars. Debt, in England, is criminal, and poverty the heaviest of misfortunes. There are two great principles that sway the nation, which thinks it sways the earth, and which possesses but too much of this planet. These are Wealth and Fashion,—fashion is the strongest, from the deep-rooted aristocracy. The cousin of a Duke, or the flatterer of a Dutchess, may be poor in all pride, and claim the precedence of fashion over mere opulence. This is the reason why the English are so shocked in America at our disregard, or happy ignorance of the local, conventional, fashionable modes of England, which, in England, were invented and are kept up with great care, to restrain the irruptions of the vulgar, for such, ninety-nine in the hundred are esteemed,—as the Romans built a wall across the island, to repress the incursions of the barbarians.

This may seem discursive,—but from Fashion to Duns, is but one step. In France, the wight subject to the latter, has less to endure than his contemporaries in England. A foreigner, however, is not favorably or hospitably distinguished by the law. He may be incarcerated for debt till death comes to release him.

It is evident, that in most nations, the rich make the laws,—for poverty is generally harshly treated. The debtor, in ancient Rome, might be sold to captivity across the Tiber. In some of the less enlightened countries, he is, at this day, a slave and may be sold like any other cattle. In China, there are laws that the creditor shall not seize for debt, the debtor or his wife, which shows that such a custom existed.

In this country, where every body is rich and thriving, debtors are hardly within the protection of the law; the legislation respecting them is of course different in various states. The slavery has been lightened in our own State, and the limits of the captive have been enlarged. In the times of the pious founders of our commonwealth the following lesson would have had its influence. It relates to a certain king who was not above overlooking his own treasure:

"And when he had begun to reckon, one was brought unto him which owed him ten thousand talents; but forasmuch as he had not to pay, his lord commanded him to be sold, and his wife and children, and all that he had, and payment to be made.—The servant therefore fell down and worshipped him, saying, Lord, have patience with me, and I will pay you all. Then the lord of that servant was moved with compassion, and loosed him and forgave him the debt. But the same servant went out, and found one of his fellow-servants, which owed him an hundred pence: and he laid hands on him, and took him by the throat, saying, Pay me that thou owest. And his fellow-servant fell down at his feet, and besought him, saying, Have patience with me, and I will pay thee all. And he would not; but went and cast him into prison, till he should pay the debt. So when his fellow-servants saw what was done, they were very sorry, and came and told unto their lord all that was done. Then his lord, after that he had called him, and said unto him, O thou wicked servant, I forgave thee all that debt, because thou desiredst me: shouldst not thou also have had compassion on thy fellow-servant, even as I had pity on thee? And his lord was wroth, and delivered him to the tormentors, till he should pay all that was due unto him."

The facilities of credit have sometimes been too great; dealers have been too ready to trust—that ill-omened word to both buyer and seller. When there is no security but in the character, or punctuality of the purchaser, this facility of credit will be much diminished. It has already had a bad effect on the public morals,—the younger class of dealers are more adventurous more enterprising, than the old.—Their word is not so good and their bond requires more sureties. The distinctions of *meum* and *tuum* have been shaken, and it is the duty of every good citizen and moralist to restore them to their original strength.

The first lesson to be planted and rooted in the

mind of a child is to love God, and never tell a lie. The second should be to shun debt, and respect the most trifling rights of property in others. To shun debt is, however, a sort of corollary to the lesson on truth; for he who has no debts, avoids the strongest temptation to tell a lie. Our veracity—all our virtues—the respect of the world—the respect of ourselves, depend upon independence. R. C.

SUMMARY.

THE COIN BILL.—We were in error yesterday, in our supposition that the bill which passed the House of Representatives on Tuesday, referred to our own gold and silver coins, as well as to foreign silver coins. It regulates the value of the latter only, at will be seen by the bill annexed, in the amended shape, in which it passed.

A Bill regulating the value of certain Foreign Silver Coins within the United States.

Be it enacted, &c. That from and after the passage of this act the following silver coins shall be of the legal value and shall pass current as money within the United States, *by tale*, for the payment of all debts and demands at the rate of one hundred cents the dollar; that is to say, the dollars of Mexico, Peru, Chili, and Central America, of not less weight than as now coined, and those restamped in Brazil of the like weight, when of not less fineness than ten ounces, fifteen pennyweights, and twelve grains of pure silver, in the troy pound of twelve ounces of standard silver; and the five-franc pieces of France, when of not less fineness than ten ounces and sixteen pennyweights in twelve ounces troy weight of standard silver, at the rate of ninety-three cents each.

Sec. 2. And be it further enacted, That it shall be the duty of the Secretary of the Treasury to cause assays of the aforesaid silver coins, made current by this act, to be had at the Mint of the United States at least once in every year, and to make report of the result thereof to Congress.

PHENIX BANK, New York, May 24. 1834.

Dear Sir—At a late meeting of the President and Directors of the Phenix Bank, the subject of redeeming the notes of all the banks in this State, *at par*, in the city of New York, was discussed.

The board has long been anxious to meet the often expressed wishes of the merchants, dealers and traders, and in the belief that no time can be more opportune than the present, I am instructed to communicate to you the intention of the Phenix Bank to receive in their daily exchanges from your bank, all notes issued by any or all of the Banks in the State of New York, at the par value thereof; provided the Banks in the city of New York will respectively keep a special deposit in the Phenix Bank, to cover the probable amount employed and the expenses incurred.

The advantages of this system to the citizens of our State—to all who are engaged in exchanging the products of her soil, or other commodities—are too apparent to need illustration.

Our banks will severally partake of the benefits to be derived from an improved currency, and an increased credit necessarily flowing from a system of greater security.

It is believed that the banks in the several counties of the State, will generally approve the contemplated measure, and by degrees will adopt it. Many have anticipated the change, well assured of advantage when the system shall be applied to the entire State.

Desirous to promote and effectively aid the above object, the President and Directors of the Phenix Bank solicit your attention thereto, and ask your co-operation. I am, respectfully, yours,

J. DELAFIELD, *Cashier*.

Dividend.—The Merchants' Bank have declared a dividend of three per cent, for the last six months, payable on the 2d June.

In Vermont, at half past five o'clock in the morning, of the 19th inst., a shock of earthquake was felt in several places.

[From the Globe of yesterday.]

We are happy to be able to contradict the report of the ravages of the Cholera among the troops at Fort Mitchell, Alabama. We learn from the Adjutant General, that an official report, dated the 22d of May, was received on the 2d inst. from Captain Fraser, the commanding officer of Fort Mitchell, in which he says not a word of sickness of any kind whatever.—If the Cholera had been among the troops, or even prevalent at or near Fort Mitchell, it is believed that Captain Fraser would certainly have reported the circumstance.

Africa, fatal Africa, has added another to the long list of those who, seeking to explore her unknown regions, have found in them only a grave. Lander, the real discoverer of the course of the Niger, has perished—as we learn by the Canada—having been murdered 200 or 300 miles up that river. Others, however, will succeed to the place thus made vacant by death, for nothing can daunt the indomitable spirit of human enterprise.

[From a Philadelphia paper.]

TEMPERANCE ANNIVERSARY.—The Anniversary of the Pennsylvania Temperance Society was celebrated on Friday, the 24th inst., at the Central Church, in this city. MATTHEW NEWKIRK, Esq. the first Vice President, took the Chair. The meeting was opened with prayer, by Dr. Beman. A letter from Dr. P. S. Physick, the President of the Society, was read, apologizing for absence. Extracts from the seventh annual report were read by the Rev. John Marsh, Secretary of the Society. They represented the cause as in a very progressive state in many parts of Pennsylvania, and gave a highly gratifying picture of the good already effected through the exertions of the Society. The Rev. Dr. Tucker, of Troy, moved that the report be accepted and printed, which motion was carried. An appropriate Temperance Hymn was then sung.

The Rev. Dr. White, of South Carolina, made a handsome speech in support of the following:

Resolved, That the influence of the female sex, always powerful for good or evil, has been such in the benevolent institutions of the age, as to cause Christians to appreciate more highly than ever their intellectual and moral elevation in Christian countries; and that the friends of Temperance, grateful for the past, look with deep interest at their co-operation in their great and delightful work of reform.

The Rev. Dr. Mason, of New York, introduced the following:

Resolved, That while the Church of Christ is, and must continue to be, the standard and the means of a pure morality in our land, it is our urgent and imperative duty, in view of the light disclosed by the Temperance Reformation, to declare in her sanctuaries and court, how far she desires this reformation to proceed in its influence on herself, and how soon she desires to reach that point.

Dr. Mason took a deep view of the connexion between the Temperance Reform, and the interests of religion, and showed clearly what may well excite admiration and wonder, that the backwardness and opposition of many ministers and churches had been such as to make it questionable, whether professedly religious men had been most for it or against it. The church, however, of all denominations, are waking up, and he supported the sentiment of his resolutions, in a manner to make ministers and Christians in the house feel deeply on the subject.

Rev. Dr. Beman, of Troy, introduced the following resolution, and closed the meeting with much wit, pungency and eloquence:

Resolved, That the abandonment of more than 3000 distilleries in the United States, and the cessation from the traffic in ardent spirits of more than 7000 venders under the light of Temperance, shows that there is a moral power in the earth, (public sentiment) which may yet expel that traffic, the great source and support of intemperance, from the abodes of civilized man.

Military.—Major M. M. PAYNE of the United States Army arrived in this city from Fort Gratiot on Saturday with two companies of Artillery; one of which is to be stationed at Fort Hamilton, and the other with the Major at New London. This is the same prompt and efficient officer, who at the time of the *Black Hawk* expedition, received an order to repair to the frontiers with his Company at 10 o'clock in the morning, and at five in the afternoon was on the way from Baltimore to this city with his entire command. He has been kept since that period at Fort Gratiot at the foot of Lake Huron, whence he now returns with his Company, after a two year's absence on seven hours notice.—[Courier and Enquirer.]

DONATION TO THE POLISH EXILES.—We have received seventeen shirts, made by the young ladies belonging to the "Young Ladies' Sewing Association of the Reformed Dutch Church in Exchange place," which have been sent, according to direction, to the Executive Committee, "to be distributed among the exiled Poles lately arrived on our shores."

ANOTHER BANK STOPPED.—The Mechanics' Bank of Patterson, N. J. closed its doors last week. It has not been, for some time, in repute; therefore there are not a great many of its notes in circulation.

[From the Batavia Times, Extra, May 31.]

GREAT FIRE AT BATAVIA.—Our village is again a heap of ruins. A fire broke out yesterday, (Friday) about 5 o'clock, P. M. between two barns in the rear of the Eagle Tavern and the stand kept by Harvey Rowe. It was discovered at a very early stage of its progress—but it almost immediately communicated to the hay, some of which projected through the cracks of the adjoining barn. Then all hopes of extinguishing it were at an end. The attention of the citizens was directed to the preservation of what property contained in the houses could be got out.—It is impossible this time, to estimate the loss which has been sustained. The following is a list of the sufferers, as far as we have been able to ascertain them:

1. The Eagle Tavern, a large three story brick building, owned and occupied by B. Humphrey—together with the brick building which was attached to and formed a part of the tavern, except the first story, which was occupied by E. C. Dibble, Esq., and Judge Cumings, as offices. Mr. H. was insured on the building and furniture, \$6,700—Buffalo office.
2. The three story wooden building, occupied by Harvey Rowe, and owned by A. Champion, of Rochester. A part of the furniture was saved.
3. The Law Office, owned and occupied by Mess. Taggart & Smith.
4. The tailor shop occupied by Leach & Jones.
5. An office occupied by Wm. H. Webster and Horace U. Soper, Esq., with a family above.
6. The dwelling occupied by Mr. Thomas Cole.
7. A dwelling in the rear of the one last named, occupied by Richard Smith, Esq.
8. A building owned by Erastus B. Seymour, and occupied by Chas. T. Buxton as a cabinet shop—by Gilbert & Seward as a tin shop. Mr. Seymour was insured \$300 at the Buffalo office.
9. A dwelling house owned by the widow Hewett, and occupied by John Putnam.
10. A law office owned by Ethan B. Allen, Esq., and occupied by Allen & Chandler.
11. A building owned by Ethan B. Allen, Esq., and occupied by Mr. Ottaway as a tailor shop and dwelling.
12. A building owned by Ebenezer Mix, Esq., and occupied by Mr. Putnam as a grocery.
13. A building in the rear of last named, owned by the same, and occupied by Mr. Leonard as a dwelling.

Both of the last named buildings were pulled down, and all of them was situated on Genesee street.

14. On Court street, a building occupied by James M'Allister.

15. A building owned by Cary & Grant, and occupied by James Harrington.

16. On Big tree street, a building owned by Cary & Grant. Messrs Cary & Grant were insured on the two last named buildings, \$500, at the Buffalo office.

17. Another building on Big tree street, but by whom it was owned or occupied we have not been able to learn.

Besides what has been enumerated, the extensive barns, shed and stables of Messrs. Humphrey, Homer, Rowe & Putnam, were entirely consumed with their contents, hay and oats. Horses, carriages, &c. all saved.

At one time our whole village was threatened with total destruction. The buildings on the north side of the street were on fire a number of times.

EXTRAORDINARY ARRIVAL.—At 1:2 past 11 o'clock, A. M., we received the United States (Phil.) Gazette of this morning, June 3d, (by the Rail Road Line,) from which we make the following extracts.

"We had a pleasant exhibition of the 'ABRORA BORRALES' last evening."

Superfine flour continues steady at \$5.50. Some demand exists for Rye Flour, and sales have been made at \$3.50, which is a trifling advance. Corn Meal in brls. is selling at \$3. 5000 bushels Genesee Wheat was yesterday sold at \$1.15, to arrive.

The morning steamboat for New York of the Railroad Line, will leave Chesnut street wharf this morning, and the succeeding mornings of this week, at three instead of seven o'clock, as heretofore, and will arrive in New York at 11 o'clock, A. M. in time for morning travellers to reach the race ground before the races commence.

This arrangement will enable our neighbors of

Philadelphia to take an early dinner in New York and return home to tea, when there shall be a 12 o'clock line from New York.

Foot Race.—Yesterday afternoon, at 5 o'clock, Mr. C. W. Clauser, according to previous notice, commenced the undertaking of performing on foot the distance of twelve miles in eighty minutes, which he performed, as we understand, with ease in seventy-eight minutes. The ground over which he passed was from the corner of Fourteenth-st. and the Bowery to Harlem bridge and back.

SAILORS' FREAK.—At the Tremont Theatre in Boston on Monday evening, a party of sailors from the Frigate Potomac, amused themselves by drawing into the second tier of boxes a part of their companions who had taken their seats in the pit. This was done by means of handkerchiefs tied together. One of the tars thus promoted, weighed near 200 pounds.

It is stated that the body, to which we referred a day or two since, as having been taken from the Schuylkill, was that of J. AUGUSTUS STONE, Esq. the author of *Metamora* and several other dramatic pieces. We learn this with deep regret. Mr. Stone possessed many qualities calculated to endear him to a numerous circle of friends. He was, we learn, subject to fits of insanity.—[Philad. Inq.]

Extraordinary Trotting Match.—A bet of fifteen hundred dollars was made some time since, by Mr. B. R. TWEED, of this city, that his two horses would trot in harness one hundred miles in ten hours, over the Centreville Trotting Course. This match against time came off on Saturday. The weather was propitious, there being so sun and the course in fine order. The horses, which are not thoroughbred, but ordinary road horses, started at 20 minutes past 9 o'clock, and performed their task in two minutes and twenty-five seconds less than the time allotted them. At starting the bets were two to one against the horses. After they had gone the first fifty miles however, opinions changed, and bets were freely offered in their favor. At eighty miles, the horses appeared a good deal distressed, and their backers seemed anxious to back out. A feeling that the horses would give in seemed indeed pretty generally to prevail during the last 20 miles, until the last half mile. But they got through their unprecedented task, and won the match for their owner in 9 hours, 57 minutes and 35 seconds. The crowd on the course was immense, and large sums of money were bet during the day. The horses were driven in a light waggon, and Mr. GEORGE SPICER was the reins-man.

Nothing equal to this has ever been done in any country before. Tom Thumb trotted in England 100 miles in 10 hours and 7 minutes, but it was in single harness.—[Courier.]

The last Galenian furnishes a table of the quantity of lead annually made at the lead mines in the United States, from their first opening in 1821 to 1833, inclusive. The statement contains a remark that the lead is less abundant this spring than at any preceding time, and that comparatively speaking, little will be made this year. The whole quantity made during the twelve years mentioned, is set down at 63,845,740 lbs., of which 7,941,792 lbs. were made during the year 1833. The mining business during that time seems by the table to have fluctuated without any perceptible law of increase. The quantity of lead raised in 1823, was more than twelve millions of pounds, and the next year more than fourteen millions and a half. It fell in 1832 to little more than four millions. This variation arises, we suppose, from the want of a regular plan of operations, a deficiency of capital, and the uncertain tenure by which the lead mine lands are held.

We find in the Gazette of Thursday the following postscript:

Postscript.—The British cutter *Post-Boy*, Captain Toogood, arrived here last evening from Falmouth, England, whence she sailed on the 5th of May. The vessel has no cargo, and only a single letter to a mercantile house in this city. The public, of course, is left to conjecture the object of an arrival under circumstances so unusual. Judging from our own feelings, we can easily imagine how anxious our readers will be for more important information on the subject.

We learn that the above vessel belongs to the Messrs. Rothschilds, bankers, and has brought out a large amount of specie.—[Lancaster says, one million of dollars!!!]

We regret to learn, that the house of the Rev. Mr. Davis, of Ballston, was burnt on Wednesday

last. A part of the furniture was saved; but the loss of Mr. D. over and above an insurance on the building, is said to be nearly \$3000.—[Saratoga Sentinel.]

[From the Baltimore American of Tuesday.]

Our highly esteemed fellow-townsmen, CHRISTOPHER HUGHES, took his departure for the Eastward this morning, to embark at New York in the 8th packet for England, and thence to resume, at the capital of Sweden, his duties as the representative of the United States. He carries with him the warmest wishes of his numerous friends for a safe and pleasant voyage, and for the continued success of his efforts in the discharge of the responsible duties of his elevated station. The occasion of his departure has elicited from him the following Address, which it affords us pleasure to be the medium of communicating to his fellow-citizens:

TO MY FELLOW-CITIZENS OF BALTIMORE.

133 South Charles street, }
1st June, 1834. }

I have been twenty years in the foreign Diplomatic Service of my country. During that time, I have been at home but four times, to re-visit my country; to see to my private affairs; and to nationalize my European-born children. I may say, that with the exception of the years 1815—16, passed in the State Legislature, I have been abroad since 1813. My three first diplomatic appointments—and I say it with pride—were conferred upon me by Mr. Madison; partly from his personal knowledge of me, and partly at the suggestion of Mr. Monroe, then Secretary of State. This last named eminent, virtuous and admirable man and patriot, when himself President of the United States, stated to me his regret, and his inability, (from the habit of the Government, and he believed, the expectation of the people, that high diplomatic rank could, and *should*, only be conferred upon those who had made themselves known to the Nation, by their services in the national Councils) to promote me to higher rank. He added—“Mr. Hughes, I dare not elevate you, to place and rank, for which I think you fit; it would be attributed to personal favoritism; for, though you are known, and advantageously known to the Administration, you are not known to the Nation. This is a pernicious usage and prejudice, of giving diplomatic missions only to prominent members, and party men, in the National Legislature; but, it is *stronger than I am!* Diplomatic fitness often turns upon other qualities; but, I repeat, I dare not do for you that which I wish, and you deserve, yet I will do something, that may be grateful to you—honorable and useful to you, hereafter—and proving my opinion and respect for you.—I will, if you will allow me, write you a letter—it may be a gratifying family archive—expressing my high value and opinion of your services; for no man has served his country with more zeal, fidelity, honor, and success, than you have done, during the ten years that you have been employed.” This was in 1823. The conversation took place at midnight, and in the President's House. It was the last time I saw my venerable and venerated friend and patron. This, (nor any other) country, never produced, nor possessed a more faithful servant, a purer patriot, or a better man, than James Monroe. I knew him from my youth: I venerated and I loved him. And among the testimonials of character and success, in my modest career, I hold his private letters to me, to be the most precious documents. My son shall inherit them, and his father's respect for the character of James Monroe.

I explained to Mr. Monroe “how happy I should have been to receive such a testimonial, if he had not previously consulted me on it, but after consultation, I begged respectfully to decline it.” I was wrong.

I have been continued, as you know, by the succeeding Administrations, in diplomatic employment; true, under some, and heavy disappointments; but, a public man may not always choose.

I arrived at New York, in September last year, after an absence from my country of eight years. My object was to plant my children in the American soil. I am now about to return to my post, in Sweden. I will not say, my humble post—for humility may not be associated with the representation of this great and happy Republic.

I embark on the 8th of June. I leave my children in America. Children should be reared in the country in which they are to live. They should be reared in its habits, its customs, its feelings, its doctrines, its sentiments—aye, even and better, in its national prejudices, (for national prejudices are always excusable—sometimes respectable,) rather than be brought

up in a foreign land. If this be true,—and I believe it,—it is especially true of Americans. Europe is a bad school for the education and rearing of Americans. I understand the word American as convertible with Republican. May they ever be *synonyms*. This is the principle of our political life—of our national and individual independence—happiness—peace—and importance, at home and abroad. Disturb—destroy this principle, admit, among you, any other distinction, than that which superior talents and superior virtue establish and command, and then only, “during good behavior,” on which you are to pass, and for limited terms, which you are to renew,—admit among you any other, than the principle of political and social equality, and rottenness will creep into your foundations,—and your fabric must fall; your blessed and beautiful Union—(in whose duration I conscientiously believe, notwithstanding the recent throes and menaces, and for whose duration I will devote, as I am ready to stake, my life!)—your glorious Union must, and will split, into degraded, powerless, unhonored fragments! You will add another to the many memorable and mournful monuments of human weakness and folly; you will furnish another argument to the logic of the foul and pernicious foes of your institutions! You will strengthen the cause of tyrants and of aristocrats, who insolently maintain, that they, and only they, are fit to govern; for “that man is incapable of self-government.”

Upon yourselves, my fellow-citizens, depend your national honor, happiness, and Liberty. Your national honor, happiness, and Liberty depend upon your Union, and your Union depends upon equality.

I am not more convinced of my Religion, than I am convinced of these truths. They have been the guides of my public and private life; they are engraven on my heart, and my heart has ever been, and ever will be, my Country's.

But, my fellow townsmen, it is not my object to address to you a political homily. You can have nothing to learn from me, in the value of your unsurpassed political and social advantages, nor the means to preserve and to perpetuate them. You know your privileges; you know their value. I know you; and knowing, I esteem and value you; and I should be unworthy of the constant and gratifying evidences of attachment, of kindness and of personal consideration, which since my boyhood I have received from you, in this my native town, if I did not beg leave to offer you my grateful and affectionate acknowledgements. I trust I am not pampering myself into the delusion of self-importance, if in my inability to call and take personal leave of the many I know and love—the companions of my boyish sports, and the esteemed associates of my riper years—if I respectfully ask to be permitted to take leave of you in this public manner; besides, it will be recollected, that though one man may receive three hundred visits in one day, it would be the work of many days for him, to return them in person.

As far as one, situated as I am, may speak of his movements, my notion is, that my absence from the United States will not be long.

“This is my own, my native Land.”

I leave it with augmented attachment; I leave it, with increased knowledge of its resources, with a deeper conviction of its unequalled blessings; I leave it, with elevated sentiments of its grandeur and its destinies. May my countrymen watch over—preserve—and promote them!

I leave my country; and I leave my children. I will not remain long from either. To return to both, will be to me an elevated joy! and I shall then, whatever I may be worth, hold myself ready, as one of the People, to obey the call of the People, and to serve them as they may think me competent to serve my country.

Nothing but poverty could induce me to accept a paid office, at home. I say this, as man should say every thing, subject to circumstances and reflection. To represent one's fellow-citizens and neighbors—and at their call—is not an office in the ordinary sense of the word. It is the only place, in my present notions, that I would consent to fill; and only then, if called to it. When called to it, an American has no right to refuse; and this is the only right an American has not. This has ever been my opinion, on this first and most important of patriotic duties; and there is one other point, on which I have ever entertained and ever shall entertain, a fixed opinion, to wit—that it is the sacred duty of every American to vote at every election. If he omit to vote, he fails in one, perhaps the chief one, of his duties to his country.

My Fellow Townsmen, I bid you an affectionate, and a respectful farewell.

CHRISTOPHER HUGHES

[From the Detroit Courier, May 21.]

IMMIGRATION.—Our streets are again thronging with life, and crowds of emigrants are daily arriving, filling all our hotels and places of public resort to overflowing. It is computed that on Friday and Saturday of the past week alone, not less than two thousand strangers arrived in the different boats at our wharves. Some are reloading their furniture and starting at once in caravans for the interior with their families; while others who are more at leisure, or are awaiting public conveyances, are grouped around with pocket map of the interior in their hands, tracing their separate routes from this great rendezvous of western adventurers. There are expressions of satisfaction and cheerfulness in these strange faces which argue any thing but disappointment or discontent at the aspect of Michigan on t'le introduction. We are happy also to observe the appearance of robustness and health which these new comers present, in whom we seem already to recognize the hardy and enterprising materials for many new and flourishing settlements. This tide, which is constantly pouring onward along the great thoroughfare of waters, seems speedily to promise to Michigan her complete quota of inhabitants requisite for admission into the Union.

It is a fact which we presume none will venture to controvert, that our population both for integrity and intelligence, will sustain a most honorable comparison with that of our neighboring sisters of the States. A prominent cause of this may undoubtedly be traced to the fact that settlers here are invariably required to pay the amount of their purchases on occupation thereof; a requisition with which the better and more able class of emigrants alone can comply. We cannot but congratulate our new friends on their choice of a location in a land so full of fatness and of promise.

[From the Quebec Gazette 23d May.]

TOTAL LOSS OF THE JAMES OF LIMERICK, WITH 11 OF THE CREW AND 247 EMIGRANTS.

We have had a conversation with Mr. Downes, the Surgeon of the *James*, one of those saved from the vessel, and who signs the statement subjoined. There is no doubt on his mind that the vessel went down with all on board. The *Margaret*, which he was fortunate enough in gaining, after receiving very serious bodily injury while embarking in the boat, came to the spot where the *James* ought to have been, in an hour or two after he had left her, and she had then disappeared. From the condition in which she was left, there can be little doubt on his mind, that she must have foundered with all on board, or, at least, by far the greater number. Some chance of a portion being saved in the boats may exist; but as the *Margaret* had a light out, they very probably would have been enabled to have boarded her. No list of passengers has been saved, the Captain's having been left on board. Their names can now only be exactly ascertained by reference to the Custom House books at Limerick. Several of the families had been well to do in Ireland, and they had with them between £2,000 and £3,000 in gold; being in most part from Rathkeale and its neighbourhood, about fourteen miles from Limerick.—When the *James* left that port, deaths by cholera were daily occurring; but although several suspicious cases appeared, none had proved fatal on the passage.

To the Editor of the Quebec Gazette:

SIR: Allow me the liberty of intruding on your space with a more accurate detail of the circumstances connected with the loss of the *James*, which was rather imperfectly given in yesterday's *Mercury*.

We sailed from Limerick on the 8th April, with 251 passengers and a crew of 16. On Friday, the 11th, we put out to sea, where, after a few days, from heavy gales, &c. we experienced nothing but a series of mishaps, having carried away our topmast, studding-sail-boom, jib boom, main-sail, fore-sail, and yard. On Sunday, the 25th, at six A. M. they set about pumping the ship out, but were not long thus engaged before the pumps were found to be choked by the passengers' potatoes, which, from the rotten description of bags in which they were kept, went adrift about the hold, filling the pump wells, and preventing the possibility of working the pumps, which were hoisted on deck, and a great quantity of potatoes brought away from them; and to prevent a recurrence of this, tin kettles, with holes made in them, were laid on the heels, which proved ineffectual; after which, baskets were substituted, with as little success. Finding the water to increase to an alarming extent, and a gale from the N. W. springing up, with a heavy sea, the ship straining very much, we had recourse to the expedient of baling her out from the fore hatch with buckets

and a provision cask made fast to a tackle; but the water casks which were floating about there, excited the apprehensions of the people, and one passenger, Henry Morgan, getting three of his fingers broken between two of them, the attempt was abandoned. About 4 o'clock P. M. she shipped a sea which carried away the lee bulwarks, and was soon after struck by a second still heavier, with the force of which she listed, canting her ballast, and never returned to an erect position. The water having reached the between-decks, and no chance of saving her presenting itself, the Captain, at five o'clock, ordered the long-boat and skiff to be lowered, as a sail tacking to the southward made its appearance. The passengers crowded into the skiff while she was within the long-boat, and by this means made it difficult to lower the latter, which, when drawn from the after chock, came against the stanchions; after which, they did not seem inclined to take further trouble with her. At half-past six we lowered the jolly-boat, in which eleven of us were picked up by the *Margaret*, of Newcastle, Capt. Wake, to whose kindness and humanity since we are indebted for our preservation.

The persons saved are—Captain Laidler; Robert S. Laidler, his brother; Henry Downes, surgeon; Thomas Enwright, carpenter; James Cook, seaman; Peter Lilly Wall and James Clark, apprentices; with Mary Hastings, Andrew Young, James Shehan, and Edmund Curry or Cedy, passengers.

Your obedient servant,

HENRY DOWNES, Surgeon of the *James*.

Still more distressing Intelligence.—Confirmation of the loss of the *James*, with upwards of 252 persons.—Loss of the bark *Astrea*, with 228 persons.

—Loss of brig *Edward*.—Loss of brig *Fidelity*.—Loss of brig *Columbus*: all bound to Quebec.—Loss of bark *Charlotte Langin*, from Liverpool for Philadelphia.—Loss of ship *Marchioness of Queensbury*.—Loss of bark *John Atkins*, from Halifax for Richmond.—Loss of brig *Margaret*, from Belfast, and four lives.

Never, within our recollection, have we had to record such a list of disasters among shipping, and loss of lives, as has fallen to our lot this day. It will be seen from the following account, copied from the Halifax Gazette of the 21st instant, that the loss of the *James* is confirmed, together with numerous other vessels.

[From the Halifax Gazette of May 21.]

Our paper of today contains melancholy accounts of shipwrecks and the loss of human life. We saw a person yesterday who was at Louisburg when the *Astrea* was lost. The survivors had reached that place. They informed him that that vessel struck on the morning of the 7th instant, against some high cliffs at Little Lorain Head, about five miles from Louisburg and almost instantly went to pieces: that she had studding sails set at the time, and up to the fatal moment of striking had gone at the rate of ten knots. The only individuals saved were the surgeon, carpenter and one seaman, who were thrown almost insensible on some of the cliffs.

SYDNEY, MAY 14.—Bark *Astrea*, William Ridley, master, with two hundred and eleven passengers and crew, went ashore at Loran, near Louisburg, morning of 7th inst., and only the surgeon and two of the crew saved! Same day, brig *Edward* struck a piece of ice near Port Nova, and sunk immediately—crew saved. On the 11th, brig *Fidelity*, Clarke, from Dublin, for Quebec, went ashore on Scattari and was lost; passengers and crew, 15 in number, saved. Same day, brig *Columbus*, Russell, from Newcastle for Quebec, was lost three miles East of Louisburg, crew saved. On the 27th ult., lat. 45 20, lon. 48 53, the *Margaret*, Walsh, from Newcastle, picked up the captain of bark *James*, from Ireland for Quebec, with ten others, only survivors of two hundred and sixty-five persons on board the *James* when she sprung a leak and sunk.

The crew of bark *Charlotte Langin*, of New Brunswick, from Liverpool for Philadelphia, has been landed here from an American fishing vessel. The ship had sprung a leak and they had abandoned her. They were three days in their boats.

Ship *Marchioness of Queensbury*, from Liverpool for Miramachi, went ashore on Cape Tormentine, night of 16th inst. but will be got off if the weather continues moderate.

Bark *John Atkins*, from Halifax for Richmond, went ashore three miles from that place, and was totally lost.

On the night of the 15th inst. brig *Margaret*, from Belfast for St. John, N. B. went ashore at Barrington, and was totally lost—crew saved. The mate's wife and four children were drowned.

[From the Journal of Commerce.]

LOCUSTS.

This year being the regular septemdecennial period for the re-appearance of locusts in our country, and these insects having already made their debut in some places, we cannot do less than devote a brief space to their history and habits. Whether the locust of the United States is of a different species from those which, at various intervals, have carried terror and desolation over large portions of the Eastern world, we cannot positively say; though it is certain that their visits have proved comparatively harmless. The history of the immense multiplication of locusts in some cases, and of the damage done by them, if it were not well authenticated, would be wholly incredible.

This has been chiefly in Oriental countries, where the insect has accordingly a proverbial reputation. "The land," says the Prophet Joel, "is as the garden of Eden before them, and behind them a desolate wilderness; yea, and nothing shall escape them." Again: "They shall run like mighty men; they shall climb the wall like men of war; and they shall walk every one in his own ways, and they shall not break their ranks; neither shall one thrust another."

This graphic description might by some be mistaken for a poetical exaggeration; but let us observe for a moment how remarkably it is accredited by the account the well known Dr. Shaw gives in his *Travels*, of the ravages of these animals in Barbary, in the spring of 1724, when they appeared in such numbers as absolutely to darken the air. After a while they retired into the plains to lay their eggs.—"These," says the traveller, "were no sooner hatched, than each of the broods collected itself into a compact body of a furlong or more square, and marching afterwards directly towards the sea, they let nothing escape them. They kept their ranks like men of war, climbing over, as they advanced, every tree or wall that was in their way; nay, they entered into our very houses and bed chambers, like so many thieves." He then goes on to state that attempts were made to stop their progress by fires of stubble and heath, but all to no purpose, so numerous were the swarms.

In 1797, Southern Africa was overrun in like manner, the traveller Barrow being there at the time; and he states that the whole surface of the ground, for an area of nearly two thousand miles, was literally almost covered with them, while the water of a wide river was scarcely visible on account of the carcasses of these drowned in endeavoring to come at the reeds on the banks. This was the third year of their continuance, and their increase from year to year was estimated at over a million fold. The year before, they had made great ravages, but were finally driven into the sea, which is their common fate, by a tempestuous north wind, and when they were afterwards cast upon the shore, Barrow says they made a bank three or four feet high, extending fifty miles in length, the taint of which was plainly perceptible at the distance of one hundred and fifty miles. It seems that during the night these insects discontinued their march and clustered together in large heaps; and at this time the farmers sometimes destroyed vast multitudes of them by driving among them a flock of several thousand sheep.

Pallas, in his *Travels in Russia*, gives a more minute description of their mode of march. After getting started in the morning, he says, they resemble a swarm of ants, all taking the same course, but without touching each other ["neither shall one thrust another."] They uniformly travel toward a certain region as fast as a fly can run, and without leaping, unless pursued. In their course, they advance from morning to evening without halting, frequently at the rate of a hundred fathoms and upwards a day.—"When their progress is opposed by ditches, they penetrate through them; their way can only be impeded by water, as they are apparently terrified by every kind of moisture. Often, however, they endeavor to gain the opposite bank, with the aid of overhanging boughs; and if the stalks of plants or shrubs be laid across the water, they pass in close columns over these temporary bridges, on which they even seem to rest, and enjoy the refreshing coolness. As soon as they acquire wings, they progressively disperse, but still fly about in large swarms."

As long since as 1650, mention is made of a cloud of locusts in Russia, which entered the country in three different places; and it is stated in a volume of the English Library of Entertaining Knowledge, and elsewhere, that they afterwards spread themselves over Poland and Lithuania in such numbers, that the earth was covered and the air darkened with them. The trees bent with their weight in

some instances, and in others they were seen lying on the ground dead, to the depth of four feet.

In some regions of the world they populate and migrate almost as regularly as certain species of birds. Irby and Mangles, in their Travels in Egypt and Syria, speak of seeing at the southern extremity of the Dead Sea, one morning, a swarm resting in a gully, in sufficient numbers to alter the color of the rocks they alighted on. The guides stated that they were on their way to Gaza, and that they passed almost annually. Volney also describes the movements of swarms which came under his own observation.

From Africa, which would appear to be the home of the animal, they have frequently come, in former times especially, into Italy and Spain. In the year '59, a vast phalanx of very large ones ravaged the former country far and wide, until they were at length driven into the sea; and it is recorded that a terrible pestilence arose from their stench, which carried off an incredible number of both men and beasts. Their depredations are said to have been such in the Venetian territory, in the year 1748, as to have occasioned a famine, in which 30,000 persons perished. There is certainly nothing improbable in this statement.

We cannot ascertain from the sources of information within our reach, that Great Britain has been infested by these insects to any considerable extent.—They appeared in England, it is stated, in 1798, but fortunately disappeared without propagating.

We shall add to these notices of the locust, as some of them may be considered apocryphal, or insufficiently authenticated, a reference to the ablest and minutest description of the same kind we have met with, and this is to be found in the missionary Kay's *Cyfrarian Researches*, published last year in London, and republished here recently by the Harpers. The year 1828 was, in the Cape of Good Hope Colony, ushered in, it seems, by "immense swarms" of these insects, which "literally darkened the Heavens for several days." On the wing, he says, they appear like a black cloud at a distance, but when they arrived at hand, their density intercepts the solar rays in such a manner as to cause an awful gloom, like an eclipse, and a noise like that of a torrent.—In some of the villages, they were spread on the ground so thickly that it was with the utmost difficulty the inhabitants could keep them out of their houses. The water conduits were filled; the rivers so contaminated that the waters were offensive to the smell: the herbage generally destroyed, the trees weighed down with them, and the vineyards laid waste. "Fields which the rising sun beheld covered with luxuries, are, before evening, a desert, for wherever they alight, not a leaf is left upon the trees, a blade of grass upon the pasture, nor an ear of corn in the field."

Mr. Kay speaks of the "frequent visits" of the locust as rendering the prospects of the *agriculturists* in that region extremely precarious. The antidote to the bane is found, to some extent, in the locust bird, which, according to a benevolent regulation of Providence, appears in myriads corresponding to the enemy it has to deal with, and makes great havoc among them. In 1332 their ravages were mostly prevented in this way.

Observations in that quarter of the world of which we have but spoken, add new illustrations to the reference made in Scripture to the ancient use of this insect for human food. In South Africa, not only do the cattle eat the locusts with avidity—perhaps, however, partly owing to the scarcity of better food which they occasion—but the Bushmen also, and other of the desert tribes, often gather them and lay them up for a winter store. The mode of curing and cooking is, to take off the wings and legs, then roast, then reduce the bodies to dust, and this is put up in bags like flour.

THE SERPENTS' BATH.—In the Bubbles from the Brunnens of Nassau, is the following account of the baths in that vicinity, said to be very efficacious in many diseases, and called the Schlangen-bad or Serpents' Bath:

"Once upon a time, it seems there was a heifer, with which every thing in nature seemed to disagree. The more she ate the thinner she grew—the more her mother licked her hide, the rougher and the more staring was her coat—not a fly in the forest would bite her—never was she seen to chew her cud—but, hide-bound and melancholy, her hips seemed actually to be protruding from her skin.—What was the matter with her no one knew—what could cure her no one could divine—in short, deserted by her master and her species, she was, as the faculty would term it, given up.

In a few weeks, however, she suddenly re-appeared among the herd, with ribs covered with flesh—

eyes like a deer—skin sleek as a mole's—breath sweetly smelling of milk—saliva hanging in ringlets from her jaws! Every day seemed to confirm her health, and the phenomenon was so striking, that the herdsmen, having watched her, discovered that regularly every evening, she wormed her way in secret into the forest, until she reached and refreshed herself at a spring of water—haunted by harmless "serpents," when full grown, about four feet in length.

The circumstance, it seems, had been almost forgotten by the peasant, when a young Nassau lady began early to show exactly the symptoms of the heifer. Mother, sisters, father, friends, all tried to cure her—but in vain: and the physician actually

"Had taken his leave with sighs and sorrow,
Despairing of his fees tomorrow!"

When the herdsman happening to hear of her case, prevailed upon her at last to try the heifer's secret remedy; she did so, and in a very short time, to the utter astonishment of her friends, she became one of the stoutest young women in the duchy. What had suddenly cured one sick lady, was soon deemed a proper prescription for others, and all cases meeting with success, the spring gradually rose into notice and repute."

Lieut. Drummond's Artificial Lights. *National Gallery of Practical Science.*—There was on Wednesday evening literally a most brilliant exhibition of Lieut. Drummond's intense lights, applicable to light-houses, telegraphic signals, geodetical operations, and all purposes which require such light to be visible at great distances. Many hundreds of the most distinguished patrons of science and eminent practical scientific men were present on this interesting occasion; and the series of experiments were conducted with extraordinary effect; Mr. Payne, the manager of the gallery, having made all the previous arrangements which were requisite with great skill and judgment.

About two years ago we gave an account of Lieut. Drummond's method of producing this powerful glare of light, by the action of oxygen and hydrogen gas in a state of combustion on a ball of lime. We now saw an Argand lamp, with parabolic reflectors of such prodigious splendour that, as it revolved, it has been visible forty-four miles off; but even this was incomparably excelled by one of the new combinations, so dazzling that no eye could bear to gaze upon it in the line of reflection; and it was stated to be visible at the distance of sixty-six miles!! The next experiment was, we rather think, made for the first time in public, and consisted of the emission of the electric spark, with a parabolic reflector, and so rapidly continued as to form a perfectly continuous light. This was beautiful; and a magneto-electric light, demonstrating the efficacy of galvanism in producing intensity, was not less so. Colored lights were also exhibited; and, altogether, a more gratifying display of admirable and useful science never came under our cognizance. The noble gallery was crowded; and every visitor expressed delight and astonishment at the splendid varieties presented to their view.

Crocodile Bird—Translated from Herodotus.—"Now as the crocodile lives much in the water, he has his mouth within quite covered with leeches.—All other birds and beasts shun the crocodile; but there is peace between him and the trochilus, inasmuch as he is benefited by that bird; for when the crocodile goes out from the water upon the land and opens his jaws, which he is wont to do, in order to receive the cool breeze, the trochilus then entering his mouth, devours the leeches; and he, delighted at the advantage he thus receives, never injures the trochilus."

Dromedaries.—The French are, it is stated, endeavoring to introduce dromedaries from Algiers into the *Landes* about Toulouse, where it is thought they may be very usefully employed.

THEY TELL ME LIFE, &c.

BY H. C. DEAKIN, ESQ.

They tell me life is like a dream, a bright, brief dream and o'er;
They tell me life is like a stream that seeks the ocean shore;
They tell me life is like a flower, that blooms but to decay;
If so, then life is only death, in holiday array!

But ah! I cannot think thy brow, my beautiful and bright,
Is but the seat where death enthroned feeds on thine eye of light;
Nor can I think that thy dear cheek, so redolent of bloom,
Is damasked only to attract the despot of the tomb.

For have not on thy brow, my love, my fond lips oft been prest?
And have I not in rapture oft, reclined upon thy breast?
And ah! how often have thy lips to thy betrothed's frown!
They tasted not of death, my love, I felt them but mine own!

Out on the withering thought that dooms such lustre to the grave!
I say 'tis false, for unto me, Heaven all thy beauty gave;
Away! away! I give to Death, to despot Death, the lie,
For God himself in love has said, "the virtuous never die."

STEPHENSON,

Builder of a superior style of Passenger Cars for Railroads
No. 264 Elizabethstreet, near Bleecker street,
New-York.

RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part of the New-York and Harlem Railroad, now in operation.

RAILROAD CAR WHEELS, BOXES AND AND OTHER RAILROAD CASTINGS.

Also, AXLES furnished and fitted to wheels complete at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to. Also, CAR SPRINGS.

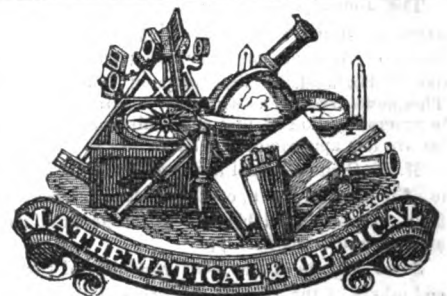
Also, Flange Tires turned complete.

J8 ROGERS, KETCHUM & GROSVENOR.

NOVELTY WORKS,

Near Dry Dock, New-York.

THOMAS B. STILLMAN, Manufacturer of Steam Engines, Boilers, Railroad and Mill Work, Lathes, Presses, and other Machinery. Also, Dr. Nott's Patent Tubular Boilers, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited.



INSTRUMENTS.

SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

EWING & HEARTT, at the sign of the Quadrant, No. 53 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude. For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewing & Heartt.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable. They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES P. STABLER,

Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' Instruments of your Manufacture, particularly Spirit Levels, and Surveyors' Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

WILLIAM HOWARD, U. S. Civil Engineer.

Baltimore, May 1st, 1833.

To Messrs Ewing and Heartt.—As you have asked me to give my opinion of the merits of those Instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming acquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprise so well merits, I remain, yours, &c.

B. H. LATROBE,

Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them, upon application, to any person desirous of perusing the same.

LATER FROM EUROPE.—By the packet ship *Canada*, Capt. Britten, from London, we have dates of the 1st of May, for which we are indebted to Messrs. Grinnell & Minturn. They came late to hand, and we are able only to give a few short extracts.

Mr. O'Connell's motion on the repeal of the Union was negatived, April 29, and Mr. Rice's Address to his Majesty, pledging opposition to the project, agreed to by a majority of 485 votes! the noes being 38.

The Debate on the repeal of the Union still continued.

The Lord Chancellor has made an earnest appeal in the House of Lords, to the better feelings of the Trade's Unions, with what effect we shall see.

The sum of 400,000*l.* in silver, had been shipped by one capitalist to Calais in one week, and great quantities to other parts of the continent.

At Berlin a change of the ministry had taken place, which had give much offence to the liberals. The investigation of the late seditious movements were still being carried on, and several persons arrested.

The Journal des Debats of Tuesday, May 28th, says, intelligence has reached government of the taking of Almeida, an important place on the frontier of Portugal, by the troops of Donna Maria.—This news created no sensation at Paris, though it is generally allowed that the affairs of the Peninsula are fast approaching a crisis.

M. De Chateaubriand has announced his intention to offer himself as a candidate to the electors of Lille. He resigned his seat in the peerage on the accession of Louis Philippe.

Some officers of the 36th regiment of the line, and others of the 4th and 9th cuirassiers have been arrested on suspicion of being connected with the republican associations.

The Spanish funds have arisen at Paris, in consequence of the convocation of the Cortez.

The city of Paris has been condemned to pay the damages and loss in several cases where gunsmiths and sword cutlers had sustained any, during the late revolutionary movements. Arrests are going on in France, and every means resorted to that can strengthen Louis Philippe on his throne. M. de S. Romain, a legitimist, has been arrested, and also one M. Mathew, an advocate, in whose possession a number of papers were found. A debate had occurred in the Chamber respecting the relinquishment of Algiers. Several fine speeches. No decision.

Portugal.—The cause of Miguel was suffering severely by desertion, 1300 men having deserted since the 1st of March.

Pedro, together with his ministers, has been excommunicated by the Pope.

Admiral Napier has been created a Count.

General Cardozo has been so hotly pursued by the Duke de Terceira, that it was supposed he would be obliged to take refuge in Spain, where he would give up his arms.

The entire country to the northward of the Douro has been cleared of the Miguelites.

SPAIN.—Quesada is in Vittoria, his corps encamped in the environs. El Pastor is at Tolosa. Butron in command of St. Sebastian. Zicmallacarregery with his brigade, the best in the service, is between Urdech and Elisondo. Merino, with a troop of horse, was attempting to revolutionize old Castile, but met with no success. The Sentinelle of the Pyrenees speaks of a conspiracy to deliver up Tarragona to the Carlists.

The town of Almirda in Portugal, had declared for the Queen. Don Carlos was there and had to fly—public feeling having manifested itself against him—some of his baggage was interrupted containing letters, which are exhibited as specimens of ignorance, being incorrectly spelt, and in bad style. It was expected he had doubled on his pursuers and entered Spain, which has induced his partisans to raise the standard of revolt in Arrogan and Castile.

The Miguelites seem to be in bad plight in Portugal; and Don Carlos has been routed from his hiding place, by General Rodil and his command, who marched into Portugal in search of him. He is supposed to have gone into Spain.

The acknowledgment of Donna Maria by Spain, and the alliance offensive and defensive brought by last arrivals, is confirmed.

In consequence of the success of the Spanish troops in Portugal, under General Rodil, and the flight of Don Carlos, the Spanish funds at Madrid experienced a very great and sudden rise, which of course elevated them also at Paris.

The Ottoman fleet has arrived at Tripoli, and it is hoped will put an end to the civil war in that regency.

LOCOMOTIVE ENGINES.

THE AMERICAN STEAM CARRIAGE COMPANY, OF PHILADELPHIA, respectfully inform the public, and especially Railroad and Transportation Companies, that they have become sole proprietors of certain improvements in the construction of Locomotive Engines, and other railway carriages, secured to Col. Stephen H. Long, of the United States Engineers, by letters patent from the United States, and that they are prepared to execute any orders for the construction of Locomotive Engines, Tenders, &c. with which they may be favored, and pledge themselves to a punctual compliance with any engagements they may make in reference to this line of business.

They have already in their possession the requisite apparatus for the construction of three classes of engines, viz. engines weighing four, five, and six tons.

The engines made by them will be warranted to travel at the following rates of speed, viz. a six ton engine at a speed of 15 miles per hour; a five ton engine at a speed of 18 miles per hour; a four ton engine at a speed of 22 1/2 miles per hour. Their performance in other respects will be warranted to equal that of the best English engines of the same class, with respect not only to their efficiency in the conveyance of burthens, but to their durability, and the cheapness and facility of their repairs.

The engines will be adapted to the use of anthracite coal, pine wood, coke, or any other fuel hitherto used in locomotive engines.

The terms shall be quite as favorable, and even more moderate, than those on which engines of the same class can be procured from abroad.

All orders for engines, &c. and other communications in reference to the subject, will be addressed to the subscriber, in city of Philadelphia, and shall receive prompt attention.

By order of the Company,

WILLIAM NORRIS, Secretary

December 2d, 1833.

For further information on this subject see No 49 772, Vol. 2, of Railroad Journal.

SURVEYORS' INSTRUMENTS.

Compasses of various sizes and of superior quality warranted.

Leveling Instruments, large and small sizes, with high magnifying power with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by E. & G. W. BLUNT, 154 Water street, corner of Maldenlane.

ENGINEERING AND SURVEYING INSTRUMENTS.

The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely new: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy—also, a Railroad Goniometer, with two Telescopes—and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.

WM. J. YOUNG.

Mathematical Instrument Maker, No. 9 Dock street, Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.

Baltimore, 1832.

In reply to thy inquiries respecting the instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad. I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable.

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sights, leaves the engineer scarcely anything to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to lateral angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying off rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,

JAMES P. STABLER, Superintendent of Construction of Baltimore and Ohio Railroad. Philadelphia, February, 1832.

Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors.

E. H. GILL, Civil Engineer.

For a year past I have used instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY R. CAMPBELL, Eng. Philad.,

German and Norristown Railroad

TOWNSEND & DUFFEE, of Palmyra, *Manufacturers of Railroad Rope*, having removed their establishment to Hudson, under the name of *Duffee, May & Co.* offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J. B. Jervis, Eng. M. & H. R. R. Co., Albany; or James Archibald, Engineer Hudson and Delaware Canal and Railroad Company, Carbondale, Luzerne county, Pennsylvania.

Hudson, Columbia county, New-York, {
Janu'y 29, 1833.

NOTICE TO MANUFACTURERS.

SIMON FAIRMAN, of the village of Lansingburgh, in the county of Rensselaer, and state of New-York, has invented and put in operation a Machine for making Wrought Nails with square points. This machine will make about sixty 6d nails, and about forty 10d nails in a minute, and in the same proportion larger sizes, even to spikes for ships. The nail is hammered and comes from the machine completely heated to redness, that its capacity for being clenched is good and sure. One horse power is sufficient to drive one machine, and may easily be applied where such power for driving machinery is in operation. Said Fairman will make, vend and warrant machines as above, to any persons who may apply for them as soon as they may be made, and on the most reasonable terms. He also desires to sell one half of his patent right for the use of said machines throughout the United States. Any person desiring further information, or to purchase, will please to call at the machine shop of Mr. John Humphrey, in the village of Lansingburgh.—August 15, 1833. A29 if R M & F

PATENT RAILROAD, SHIP AND BOAT SPIKES.

The Troy Iron and Nail Factory keep constantly for sale a very extensive assortment of Wrought Spikes and Nails, from 3 to 10 inches, manufactured by the subscriber's Patent Machinery, which after five years successful operation and now almost universal use in the United States (as well as England, where the subscriber obtained a Patent,) are found superior to any ever offered in market.

Railroad Companies may be supplied with Spikes having countersink heads suitable to the holes in iron rails, to any amount and on short notice. Almost all the Railroads now in progress in the United States are fastened with Spikes made at the above named factory,—for which purpose they are found invaluable, as their adhesion is more than double any common spikes made by the hammer.

All orders directed to the Agent, Troy, N. Y., will be punctually attended to.

HENRY BURDEN, Agent.

Troy, N. Y. July, 1831.

Spikes are kept for sale, at factory prices, by I. & J. Townsend, Albany, and the principal Iron Merchants in Albany and Troy; J. I. Brower, 229 Water street, New-York; A. M. Jones, Philadelphia; T. Janviers, Baltimore; Degrand & Smith, Boston.

P. S.—Railroad Companies would do well to forward their orders as early as practical, as the subscriber is desirous of extending the manufacturing so as to keep pace with the daily increasing demand for his Spikes.

J28 1am

H. BURDEN.

RAILWAY IRON.

Ninety-five tons of 1 inch by 1/2 inch.		Flat Bars in
200	do. 1 1/2 do.	lengths of 14 to 15
40	do. 1 1/4 do.	feet counter sunk
800	do. 3 do.	holes, ends cut at
800	do. 2 1/2 do.	an angle of 45 de-
	soon expected.	grees with spli-
		cings plates, nails
		to suit.

250 dn. of Edge Rails of 36 lbs. per yard, with the requisite chairs, keys and pins.

Wrought Iron Rims of 30, 33, and 36 inches diameter for Wheels of Railway Cars, and of 60 inches diameter for Locomotive wheels.

Axles of 2 1/2, 2 3/4, 3, 3 1/4, 3 1/2, and 3 3/4 inches diameter for Railway Cars and Locomotives of patent iron.

The above will be sold free of duty, to State Governments and Incorporated Governments, and the Drawback taken in part payment.

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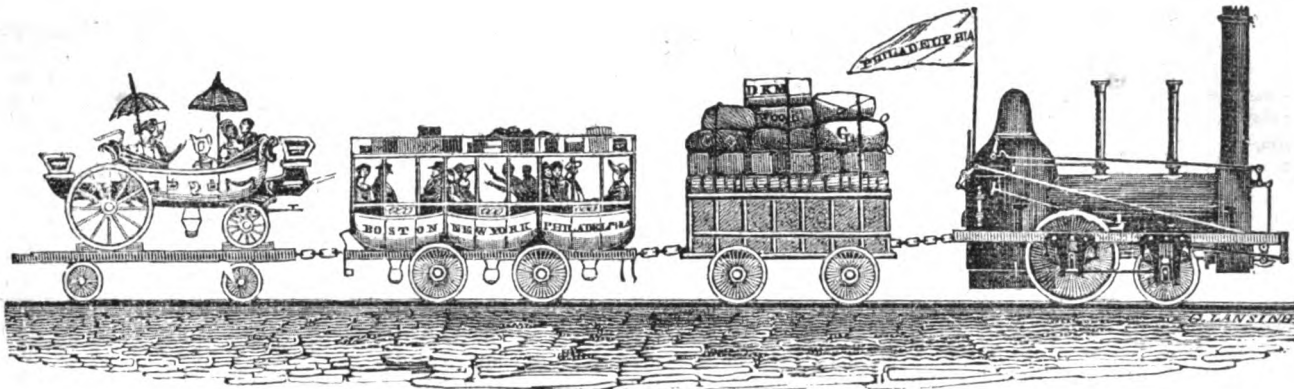
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AMERICAN RAILROAD JOURNAL, AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT No. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, Editor.]

SATURDAY, JUNE 14, 1834.

[VOLUME III.—No. 23.]

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, JUNE 14, 1834.

Those subscribers who have paid in advance for the Journal, will please excuse any apparent want of attention in its selections for a few weeks past, as the deficiency, if any, arises from having had to devote the time which ought to be given to its columns to borrowing money, to pay its current expenses.

Those who have not paid for the current, but more especially for the previous years, will excuse us, we trust, for saying that unless they pay the amount due soon, we shall be compelled to strike their names from the list. It can no more be published without prompt pay, than a locomotive engine will ascend an inclined plane without steam. We shall forward their bills by mail, and desire them to remit by the same channel.

At a meeting of the stockholders of the Boston and Providence Railroad Corporation in Boston, on Wednesday the 4th instant, the following gentlemen were elected Directors for the ensuing year, viz.: Thomas B. Wales, Patrick T. Jackson, Joseph W. Revere, John F. Loring, of Boston; William W. Woolsey, Charles H. Russell, of New-York; Charles Potter, of Providence.

And subsequently the Board elected Thomas B. Wales, President; John F. Loring, Treasurer; Benjamin R. Nichols, Clerk.

In our Journal of the 31st ult. we briefly alluded to the charter which had been granted by the Rhode-Island Legislature for continuing this very important railroad from Massachusetts into the city of Providence, and the contemplated opening of that part of it which had been finished, for immediate use. We had not the pleasure of being present on that occasion, engagements having prevented our acceptance of the agent and engineer's invitation; but from some of the stockholders who went on from this city, we learn that they were met at Providence by the directors of the Company,

agreeably to appointment, and, together with a party of gentlemen from Providence, went over and examined the line of the road from the vicinity of India Point, near Providence, to its termination in Boston, and were highly satisfied with the whole appearance of the work. The Company's depot in Boston appears to have been very judiciously located near the foot of the Common, which is a central and convenient point for travellers, and the large building already erected, with its inclosure, affords ample accommodation for the purposes of the Company at that end of the road. The annual report of the directors, of which we expect shortly to obtain a printed copy, shows the whole work in a very favorable light, and there is every prospect that the entire route from Providence to Boston will be ready within twelve months from this time, for the transportation of passengers and goods. On Wednesday the 4th inst. the road was opened for about ten miles towards Dedham, and the directors, with their friends, in the handsome new cars belonging to the Company, were drawn over this part of the road by a locomotive engine, at the rate of more than twenty miles an hour, with apparent ease, and their return to Boston, after a collation at the Sprague Railroad House, politely tendered by the agent and engineers, was effected at a still more rapid rate, the company highly gratified by their excursion.

The following named gentlemen were, on the 2d inst., elected directors of the Utica and Schenectady Railroad Company:

Ernstus Corning, Nicholas Devereaux, Alfred Munson, Henry Seymour, Nathaniel S. Benton, Tobias A. Stoutenburgh, Alonzo C. Paige, John Townsend, Lewis Benedict, James Porter, James Hooker, John L. Graham, Thomas W. Olcott.—[Albany Even. Jour.]

SCHENECTADY AND SARATOGA RAILROAD.—At an election for directors of the Saratoga and Schenectady Railroad Company, held on the 5th instant, the following gentlemen were chosen for the ensuing year: John Townsend, of Albany; John I. De Graff, of Schenectady; John Clarke, of Saratoga Springs; George W. Giles, Henry H. Lawrence, John B. Lasala, Bernard Graham, William Wright, John Ferguson, of New-York.

At a subsequent meeting of the directors, the following officers were elected for the ensuing year: Henry H. Lawrence, President; John Townsend, Vice President; John Ferguson, Secretary.

The following gentlemen were appointed Inspectors for the next annual election: Moses

Henriques, David Augustus Clarkson, Richard Lawrence.—[Albany Evening Journal.]

We trust our correspondent, C. O., will not suspect us of a design to suppress his communication, in consequence of his prediction that a neighboring city will ultimately take the lead of the "City of the Island," or of Gotham. Accident, not design, has had a hand in it.

We now give it a place with pleasure—and, in reply to his query at its commencement, will say that there is reason to apprehend that railroads will be, as certain as that canals have been, made where they will not be profitable to stockholders.

It is, as he says, desirable that the location of important lines of railroad should be made with great care, and with an eye to future, as well as to present, usefulness.

To the Editor of the Railroad Journal.

SIR,—Has it never occurred to you that the capital vested in many railroads and canals is likely, if not exceedingly profitable at the commencement, to be eventually lost, from the roads and canals being superseded by others which may be made afterwards. The great and ultimate object of these improvements is to facilitate exchanges—to cheapen and expedite transportation to and from market—as, between the great coal region, or between the great agricultural west and the best market, whether Philadelphia, New-York, or Boston. Now, if it be assumed that transportation by railroads, or by some better roads, steam being the impelling power, shall supersede, where practicable, all other modes of locomotion,—and I do not suspect myself of being alone in the opinion that there is no extravagance in such an assumption, particularly when we notice the progress of things in Europe—it is no more than reasonable to begin to contemplate, and try to foresee and act upon the natural and inevitable results which must follow, and to lay them before the public, that they may be fairly in view, and have proper consideration in the mind of every man, or company, when coming to a determination in regard to any proposed improvement, both as respects its location and the manner in which it shall be completed, or the amount of capital which may be safely invested in it.

The climate and productions of Europe and North America are so nearly alike, that as the state of science and the arts in these quarters of the world continues to come nearer to an equality, it is fair to conclude that the exchanges of merchandize will hardly keep pace with the increasing population of America. Still, as the condition of men is improving, and society

and nations are becoming more intimate and friendly in their relations, and curious in their inquiries, we may suppose that travel for gratification will greatly increase between the two—this is proved by the number and constant increase of fine ships as packets; and it fairly indicates, in connection with the extent to which steamboats are coming into use, and the long voyages which they occasionally make, that the time is not distant when the packet ships will be propelled by steam. No railroad can be laid across the Atlantic. It will be an object to have each of the two ports in Europe and America, for whence most of these ships may be expected to depart for the other, situated conveniently as it respects the interior parts of the country, and as near together as may be. The wearisomeness of a long sea voyage will render these considerations indispensable, and may lead to some changes not now much thought of.

But to leave this part of the subject for a while, and dwell more particularly on our own United States.

To attain the greatest rapidity of motion will always be an object of controlling importance, and therefore level regions will be greatly desirable for the location of the principal thoroughfares. The intercourse and exchanges between the north and the south must increase vastly beyond all precedent, and probably beyond all present anticipation of the most enthusiastic, for as speed of transportation increases, and the cost is reduced, the productions of each of the various climates will be vastly more consumed in the other climates; and the assumption is, that transportation by land will gradually take the place of water navigation, first, for persons travelling, and then for merchandise, and particularly on account of its expedition, safety, and regularity. This consideration is made stronger, from the fact that much of the interior, and the finest portion of North America, and that which will soon be the most productive and most densely settled, and of course require the greatest exchanges of this character, is already as near by land to the most important productions of southern climates, as it is to our eastern commercial ports. It is not too early, then, to begin the inquiry, where shall be our principal and leading roads? for it is plain that they are not yet located, and that they cannot be determined on judiciously without the most grand and enlarged views, and the most extensive and accurate surveys.

Without attempting to speak of details, which can of course be only determined by such surveys, it is pertinent, and may be profitable to notice, that the formation of the country and the condition and wants of the citizens, present and future, clearly indicate that the road already commenced at Albany must be continued without any regard to navigable waters, on the best and most level ground westward, indefinitely; That another road from Norfolk, or perhaps from Boston, must proceed southwardly over the level region, near the coast all the way, to some harbor where a town is yet to spring up near the south cape of East Florida, from whence there will be a busy steamboat intercourse with Havana; That a branch of this road will proceed, say from Savannah, to New-Orleans, and thence into Texas, and onward, onward; That another principal road will be from this new city on the Cape of Florida, into the great valley of the Mississippi. This brings me back to the thoughts which put me upon this essay, the errors likely to be made in the location of railroads. I perceive some are designed to communicate only between one inland water navigation and another. These may prosper long enough to refund their cost; but the day is not distant when they will have comparatively little value.

Finally, as your journal is likely to be extensively preserved for future reading and reference, and as I am an old man, and shall hardly trouble you many times more, I ask of you the further favor to record a few prophecies.

First, fresh water navigation, including that

of the Mississippi and all its tributaries, will be discontinued, probably within twenty years.

Secondly, New-Orleans, and all cities in unhealthy situations, will greatly decline, and new cities and towns spring up in more healthful and advantageous situations, and that the queen of these will be somewhere at a point not yet thought of in the great valley.

And thirdly, that either Boston or Halifax is destined to take the sceptre from the highly favored city of the island.

And, to conclude, again I would most respectfully hint to the men of Boston (and for this I hope they will remember my children) two things—first, to spare no pains, nor grudge any capital, either in the location or construction of their westward and southward railroads; and secondly, to turn their attention to European steam packets on a large scale. I beg pardon: Boston folks need no hint from me on their own affairs. C. O.

Deep Creek, Sept. 5, 1833.

On a General Mean of computing Descriptive Data of Ellipsoidal Arches, with a new Theorem, and Mechanical Description of their Working Drafts. By Wm. M. CUSHMAN, C. E. To the Editor of the American Railroad Journal, &c.

SIR,—I am induced to send for the Journal the following theorem, and incidental observations, relating to the means of describing the working drafts of ellipsoidal arches, in consequence of the solution of that problem having frequently occupied the attention of the scientific engineer; and still being, I conceive, a desideratum: at least, general expressions possessing the simplicity desirable and even requisite for practical purposes, and furnishing rigorous results, have not yet been investigated for obtaining the pre-requisites to the description of this curve—which is perhaps the most useful and important of any which are used in the whole range of arcuation.

Although the problem is well known to be susceptible of rigorous solution, the length of the process of computation has been deemed so formidable, as to induce its supercedure by mechanical processes: the distinguished Corps de Ponts et Chaussées recommend a graphic solution. This solution is objectionable from its obvious want of rigor—a sufficient objection, I apprehend, when it is considered that, in far the greater number of instances, does this curve find its application to structures involving an expenditure of thousands, and having their elegance and stability materially affected thereby. The process which they would have chosen in the computation, it would seem, was, and must have been, quite formidable, to have induced this justly eminent Corps to recommend this course; but with the assistance of the theorem I am about to advance, a perfect estimation of all the pre-requisites for the description of this curve, for the greatest number of centres desirable in practice, and for arches of the largest dimensions, may be achieved in a lapse of an hour or two—an interval of time which I fancy the practical engineer will admit it is often necessary to exceed in the adjustment of much more trivial matters.

The peculiar appositeness of the semi-ellipsoid, both in regard to equilibration and feasibility, when compared with the full centre, or its segment, or that of the ellipsis, as well as its elegance, will secure its adoption in preference in arches of considerable span, which are not liable to the condition of sustaining much pressure at the crown, or whose situation is not peculiarly favored by nature, at most of the localities which fall within the province of the civil engineer; for, in many places, the full centre, apart from its weakness, is absolutely inadmissible; and the segment of a circle can seldom be fortified with abutments sufficiently strong and massive to resist its stupendous thrust.

The ellipsoidal arch, or l'anse de panier, which answers the conditions of the ellipsis, has superseded it, and derives its importance chiefly from the fact of its mechanical description being

executed with great ease, and because it presents a ready mode of making the drafts for the voussures—of which it is a rigorous condition that the joints be normal to the curve.

It may perhaps be unnecessary to give a demonstration in detail: the mathematical reader, with the aid of a diagram, will readily comprehend and trace its successive steps. To avoid indetermination, it is however a necessary condition, that the transverse axis be the locus of the centre of the least arc, and the prolongation of the semi-conjugate be the locus of the centre of the greatest arc; that the distances from these two centres to the common centre bear a given ratio, as $\frac{m}{n}$; that the subdivisions

of these two lines, made by the intersections of the radii and their prolongations, bear, among themselves, a given ratio. It has further been conventionally determined that, in general, the subdivisions of m be in the ratio of the natural numbers 1, 2, 3, 4, &c., commencing at the least arc, and those of n be equal among themselves.

Let the subdivisions, or rather intersections, of m , by the radii, commencing with the least arc, be designated by b, c, d , &c., then the proposition is,—to find upon the transverse axis the position of the point b .

If the vertex be taken as the origin, the general equation of the abscissa for b will be

$$x = \frac{\lambda \cdot m - \gamma \cdot (S - n)}{\gamma - \lambda} \quad (1.)$$

in which, x = abscissa; λ = semi-minor axis; γ = semi-major axis; and S = sum of the sides of the polygon formed by lines joining the centres, b, c, d, e , &c.

It is plain, from inspection, that when S is known, the whole may be considered as known. The quantity S is that which it has been proposed to eliminate by construction, on account of the length and tedium of the process of computation.

If, however, b', c', d', e' , &c., represent the lesser angles formed at b, c, d, e , &c., by the radii of curvature with m , and C', D', E', F' , &c., be the angular values of each sector at C, D, E, F , &c., which are equal to the differences of the former set of angles, taken in order, then I affirm that, in general, the subsequent theorem is true, viz.

$$S = \frac{1 \cdot \sin. c'}{\sin. C'} - \frac{1 \cdot \sin. b'}{\sin. C'} + \frac{2 \cdot \sin. d'}{\sin. D'} - \frac{2 \cdot \sin. c'}{\sin. D'} + \frac{3 \cdot \sin. e'}{\sin. E'} - \frac{3 \cdot \sin. d'}{\sin. E'} + \frac{4 \cdot \sin. f'}{\sin. F'} - \frac{4 \cdot \sin. e'}{\sin. F'} + \frac{5 \cdot \sin. g'}{\sin. G'} \text{, \&c.} \quad (2.)$$

an expression which, following a plain mathematical law, might obviously be extended, by inspection, to resolve S for an indefinite number of centres. It is a remarkable feature of this expression, that the law which it obeys is so simple and obvious as to be easily retained by the memory, and consequently the operator has only to write it out and apply the tables at any time occasion may require its application.

It is thus observable that the 1st term = S , for 3 centres; the algebraic sum of the 3 first terms = S , for 5 centres; of the 5 first terms = S , for 7 centres; and, in general, if v = number of centres, $(v-2)$ terms = S .

Also, if R_1, R_2, R_3 , &c. be the radii of each sector respectively, then $x = R_1$, = least radius; $x + 1$ term = R_2 ; $x + 3$ terms = R_3 ; $x + (v-2)$ terms = $x + S = R \frac{(v+1)}{2}$ = greatest radius of curvature. It is

possible to construct the curve without knowing any radius but the greatest; but they, as well as the negative terms taken separately, will be found serviceable, as checks, in fixing the position of the centres, and are estimated

without any additional trouble; since being parts of S , it is only necessary to preserve the results of the separate terms in order to obtain them. Thus does a single simple expression afford all the data for tracing this important curve.

Although *speculatively* the expression might be simplified, in bringing the pairs of adjacent terms affected by contrary signs, to a common denominator, yet it would not be *practically* so, for it would not then be united to logarithmic computation, for which operation it has now the most convenient form. If the calculation be skillfully conducted, its valuation will be found brief and comprehensive. For eleven centres, the logs. of all the angles may be found by 10 references to the tables; and if the arithmetic complements of the logs. of their differences be taken, as also the logs. of 1, 2, . . . 5, the simple addition of these logs. agreeably to the prescribed formula, with the summing of the natural numbers answering thereto, will be the only subsequent operations.

Thus, if the span of arch be 120 feet, its rise 40 feet, the numbers of centres 11, and it be determined that the ratio $\frac{m}{n} = \frac{1}{3}$, then will the position of b be indicated by the division of the semi-span in the ratio 15: 18.71, or at 26.7 feet from the common centre; and $R \frac{(v+1)}{2} = 120$ feet = span.

Whence it is inferable, that the anse de panier of 11 centres, having the ratios $\frac{m}{n}$ & $\frac{\lambda}{2\gamma}$ each $= \frac{1}{3}$, has its greatest radius equal to the span, or that $R \frac{(v-1)}{2} = 2\lambda$; and thence may it be constructed without any calculation, simply from the known span and rise.

Its Mechanical Description.—It has not, hitherto, I believe, been remarked that the anse de panier is an *involute*, the evolute of which and locus of the centres of curvature is the polygon b, C, D, E , &c., and x the radius of curvature for the vertex. Hence, the most elegant, ready, and perhaps the best, mode of describing it mechanically, after the requisite lines have been obtained as above, is,—to fix firmly, in the plane of the draft, pins at the vertices, and at each of the central points, upon either side of n , to attach a small but firm flexible wire to the centre lying upon the conjugate produced. After plying it about the polygon to b , and increasing its length by x , which will extend it to the vertex—its evolvment will trace one half. In plying the wire upon the polygon lying upon the other side of n , the other half may be traced.

Or, take the wire $= R \frac{(v+1)}{2}$, and sweeping from the crown, ply the wire about the polygon as before, for one half; returning to the crown, ply it about the symmetrical polygon on the other side of n , for the other half.

As the wire in these movements is always in the direction of the radius of curvature, or the normal, the joints are readily constructed in this mode of description.

Very respectfully,

W. M. CUSHMAN, C. E.

Albany, May 29, 1834.

RAILROAD ON THE BANKS OF THE RHINE.—By the Hague Journal, we learn that the Prince of Orange had returned on the 27th from the head-quarters of the army to the Hague, and thus, we believe, has put an end to the apprehensions which had been entertained by the Belgians that his presence there was the forerunner of an attack. M. Dedel, also, had arrived from London at the Hague. We see that the Dutch are making a rapid progress with steam-carriages, and railroads. Messrs. Stratingh and Becker have tried a steam-carriage on the common road at Groningen, and it has run through the town without inconvenience. This was the first experiment. It is expected that the machine will be improved. A railroad

is to be laid down from Amsterdam, on the right bank of the Rhine, passing through Dusseldorf and Elberfeld to Duis, opposite to the harbor of Cologne, and preparations are making for carrying it into effect. The line is marked out, and Prussia is disposed to agree to the undertaking, the principal author of which is Lieutenant Colonel Bake. The capital necessary is estimated at eleven million florins, the annual expense at 70,000 florins, and the receipt at 1,300,000 florins. Such prospects are far more useful than those marchings and counter-marchings of troops of which we have of late heard so much.—[London paper.]

THE NEW SCOTCH STEAM SHIP.—Yesterday considerable interest was created on the river by the arrival of the new and splendid steamship Dundee, from Scotland. She entered the pool with the colors of all nations flying from her rigging, about half-past ten o'clock, and at 11 o'clock was safely moored at the London Dock buoy, opposite the Wapping entrance. Three cheers greeted her first arrival in the Thames from the people in waiting. This large steamer measures 180 feet in length on the deck, and 51 feet in breadth over the paddles, makes up 107 berths for passengers, and her chief cabin, which is fitted up in a most splendid style, contains a library of books, and is capable of conveniently accommodating 100 passengers at dinner. Her engines are of 300 horse power, and are from the manufactory of Mr. Robert Napier. The Dundee was built at Port Glasgow, under the superintendence of Mr. John Wood, and made her first passage to London in 38 hours and a half, with a strong head wind against her more than two thirds of the voyage. With the exception of the Monarch, Edinburgh steamship, launched last summer, she is said to be the largest steamer yet built, and she will shortly be followed by the Perth, a twin vessel of the same size, belonging to the same Company.—[Engl. pap.]

MR. BETHUNE'S STEAMER.—We have examined the model of the boat now placed at the Exchange. It resembles, in the build of its hull, Mr. Burden's boat: but instead of two barrels, it has three, and the wheels revolve on each side of the middle barrel. The draft of water is very little, and undoubtedly the speed of the boat would be great. It has also some advantages over the other boats, in the arrangements above deck, offering a covered walk of 412 feet, &c. Upon the whole, Mr. Bethune's exertions deserve encouragement, and may lead to some real improvements. With the present overdone business in steamers, and the general depression of trade, it could hardly be expected that large investments would be made in a new scheme of this kind. What we want most, and what might afford some prospect of success, would be small boats, built as cheaply as possible, for passengers alone, and having great speed. Such improved boats run in several parts of Great Britain, and particularly on the Clyde in Scotland. Under present circumstances, such a speculation would also be very uncertain. But ultimately, our freight and passage steamers must be replaced by those for passage only; without, indeed, railroads take the place of all descriptions of water carriage, the latter being certainly less rapid and more expensive.

We copy Mr. Bethune's own statement of the dimensions and properties of his model:

Dimensions of the Model.—(Scale, $\frac{1}{2}$ inch to a foot.)—Centre tube, length 220 feet, side tubes, ed. 190, diameter 12 feet ed. at centre, and 2 feet at the ends; extreme length on deck, 244 feet; extreme breadth in centre, 72 feet; lower cabin, length 192 feet, centre breadth of the same 52, stern breadth 37; upper cabin, length 182, centre breadth 40, stern do. 29; height of both cabins, $7\frac{1}{2}$ feet; lower wings on deck, 10 feet, outside of cabin; fender outside of tubes, 5 feet on each side; upper piazza, breadth 8 feet, circumference or length of walk round which is 412 feet; promenade deck,

length 194 feet; spaces between the tubes, 13 feet; proposed diameter of two water wheels, 27 feet; total weight of the three tubes, superstructure, and two engines of 50 horse power each, on board, 275 $\frac{1}{2}$ tons, which will displace 9875 cubic feet of water. Draught of water, when light, 3 feet 9 inches; do. with 1500 passengers on board, 4 feet 6 inches. Cargo required to sink the tubes to their centre, or to six feet draught of water, 336 tons.—[Quebec Gazette.]

We extract the following interesting account of the first application of steam to vessels, from the April number of the Military and Naval Magazine. The statement appears to be well vouched for, and there is little doubt of its correctness.

STEAM NAVIGATION.—It appears from a late publication, a very valuable one by the by, "Navarette's Collection of Spanish Voyages and Discoveries," that the first known experiment of propelling a vessel by steam was made at Barcelona, more than eighty-five years before the idea of procuring motion by it was first promulgated by Brancas, in Italy—more than a century before this agent was applied to any useful purpose by the Marquis of Worcester, in England—and nearly three centuries before our own Fulton, adapting and combining the invention of a number of contemporary mechanics, successfully solved the same wonderful problem. Curious as this fact may appear, it is completely established by various documents lately found in the archives of Salamancas; and is so circumstantially stated as to be incontrovertible. From these it appears that, in 1543, Blasco de Garay, a sea officer, offered to exhibit before the emperor Charles V., a machine by means of which a vessel should be made to move without the assistance of sail or oars. Though the proposal seemed extravagant, yet the man appeared to be so confident of success that the emperor ordered a commission to witness and report upon the experiment. It consisted of Don Eurique de Toledo, Don Pedro Cardona, the Treasurer Ravago, the Vice Chancellor Gralla, and many experienced seamen. The experiment was made on the 17th day of June, 1543, on board a vessel called "Trinidad," of two hundred barrels burden, which had lately arrived, laden with wheat, from Colibre. At a given moment this vessel was seen to move forward and turn about at pleasure, without sail or oar, or human agency, and without any visible mechanism *except a huge boiler of hot water, and a complicated combination of wheels and paddles.* The harbor of Barcelona resounded with plaudits, and the commissioners, who shared in the general enthusiasm, all made favorable reports to the emperor, except the treasurer Ravago. This man, from some unknown cause, was prejudiced against the inventor and his machine. He took great pains to undervalue it, stating, amongst other objections, that it could be of little use, since it only propelled a vessel *two leagues in two hours*—that it must be vastly expensive, as it was very complicated, and that there was great danger of the boiler's bursting frequently. The experiment over, Garay collected his machinery, and having deposited the wooden part in the royal arsenal, carried the remainder to his own house. In my reading I have somewhere met with the above, which you may deem worthy of a place in your Magazine. The details may be relied on, as I made a note of them at the time in the JOURNAL OF A REEFER.

METEOROLOGICAL RECORD, KEPT AT AVOYLLE FERRY, RED RIVER, LOU.

For the month of April, 1834—(Lat. 31.10 N., Long. 91.59 W., nearly.)

Date.		Thermometer.			Wind.	Weather, Remarks, &c.
1834.	Morn'g.	Noon.	Night.			
April 1	64	78	76	s	clear—ev'ng cl'dy—planted sweet potatoes—R. Riv. rising, below h. w. m.	
" 2	68	83	62	calm	" — " severe storm, and rain from north—R. Riv. at a stand [2 f. 9 i.]	
" 3	58	61	59	"	cloudy—light showers all day—night clear	
" 4	50	72	66	"	clear all day and night	
" 5	54	72	65	"	" " "	
" 6	49	71	63	"	" " "	
" 7	48	74	70	"	" " " —planted S. E. field corn	
" 8	52	72	68	s	cloudy all day—Red River falling	
" 9	65	71	70	"	" —rain and heavy thunder from 11 A. M. and all night	
" 10	60	76	72	calm	clear	
" 11	64	74	64	"	"	
" 12	54	75	65	"	"	
" 13	56	68	62	n	cloudy—rain in the morning—evening clear	
" 14	57	72	64	calm	clear all day	
" 15	54	74	70	"	" " "	
" 16	64	80	70	s	cloudy—rain in the morning—clear day	
" 17	62	79	76	"	clear all day—commenced mowing red clover field for hay	
" 18	70	82	68	"	" —evening severe gale—rain and thunder from south-west	
" 19	64	74	74	calm	cloudy—evening clear—Irish potatoes, new crop, large and fine	
" 20	65	80	72	s	foggy morning—clear day	
" 21	70	80	76	s—high	cloudy all day	
" 22	73	80	78	"	" " —heavy thunder and rain all night	
" 23	66	81	76	s—light	" —rain in morning—clear day—night calm and cloudy	
" 24	70	72	69	n w	" all day—rain all night, and calm	
" 25	63	63	64	n E to n	" —rain and showers all day and night	
" 26	55	60	59	calm	clear—foggy morning—snap beans and peas for use	
" 27	57	74	70	"	" all day	
" 28	56	72	69	"	" " —planted leveled field over the river	
" 29	55	80	71	"	" " "	
" 30	69	84	73	s	" " "	

Red River fell this month 1 foot 2 inches—below high water, 3 feet 11 inches.

AVOYLLÉ FERRY, on Red River, La. }
May 7, 1834. }

To the Editor of the American Railroad Journal.

SIR,—You herewith receive the meteorological table for the month of April, 1834, regularly entered. I regret to see in the Railroad Journal, vol. 3, No. 12, that you have not received my letter of 3d January last. I now inclose you a copy of that; also, extracts from 6th December last: as they were both sent by the same mail I presume they shared the same fate. Copies of the meteorological tables for November and December are also inclosed.

Most respectfully, your obedient servant,

P. G. V.

On the Dip and Declination of the Needle. By
P. G. V. To the Editor of the Railroad
Journal.

Avoylle Ferry, May 7, 1834.

DEAR SIR,—The application of a manufacturer of compasses, in Birmingham, (Railroad Journal, Vol. III, No. 11, calling for information of the dip and declination of the needle, and its *variations*, I think a very important inquiry. In my letter to you, (I think in November, 1832, no copy before me,) I made a similar request, which was, no doubt, overlooked, or thought chimerical. I now wish to add to the manufacturer's inquiry, that the latitude and longitude of the different places be given, and say take the variation from June to December in each year, throughout America, and bring them together : in a few years that long sought problem will be settled. With the observations and actual experiments of Capt. Ross, of the *variation of the Magnetic Needle*, every practical surveyor in the United States can, at any time, give the variation of the needle, and mariners at all times and places wherever they may happen to be.

I have made these hasty remarks since closing my letter of to-day, to give you some idea of my opinions, that you may, if you choose, make some remarks from them.

Your friend and servant.

P. G. V.

We ask the attention of those of our readers who have the means and the inclination to investigate the subject of the above communication. The result of their inquiries, when attained, will always find a place in the Journal and Mechanics' Magazine. P. G. V. will please accept our thanks especially for his duplicates.

We are informed that the speed of the locomotive, on several trips during the present week, has been a mile in two minutes. The distance on which the cars are now running is about 20 miles, and is traversed by the locomotive both ways, including all stoppages, in three hours and a half.

The responsible department of engineer is ably sustained by Mr. Lawson, an English gentleman, under whose superintendence the locomotive has been put in operation, and by whom it is now conducted. It may be deemed fortunate that the Company were able to procure the services of a gentleman to fill this essential station, who combines both the mechanical and practical knowledge of the art.

It has been suggested to us that persons should be cautioned from travelling on the track of the railroad. Indeed, from personal observation, we are convinced that such travelling is attended with considerable inconvenience, if not actual danger; horses become frightened when passing the locomotive, and sometimes quite unmanageable.—[North Alabama.]

Delaware and Raritan Canal.—We learn that the water has been let into the Delaware and Raritan Canal, and that in a few weeks it will be in full operation. On Tuesday evening last, the Directors made up a party, and took an excursion a few miles upon its waters. The Canal commences in front of the town of New Brunswick, and communicates with the Delaware at Bordentown. It is about 43 miles long, 75 feet wide, and 7 feet deep. It has two tow paths, and is so constructed as to admit the passage of sloops of 50 to 100 tons burden, affording a complete and safe water communication between the two cities of New York and Philadelphia, greatly facilitating the conveyance of merchandize, and producing a very considerable saving in the amount of insurance.

By an inscription on a marble tablet which is inserted in the stone work of the lock at the city of New Brunswick, it appears that the Canal was commenced in January, 1831, and completed in May, 1834. It has 14 locks—13 are 24 by 110 feet,—the other is still larger. The feeder which supplies the Western division, is 24 miles long.—[Jour. Com.]

*Proceedings of the Royal Institution, London,
Feb. 14, 1834—Evening Meeting. [From
the London Repertory of Arts, &c.]*

Dr. Faraday gave a conversation on Ericsson's Caloric Engine. He commenced by stating that he felt himself placed in a position of considerable difficulty, in bringing forward a subject on which such difference of opinion existed; yet the object of this institution was

the philosophy of a question, not to decide on the probable result in a mercantile point of view, of any invention or engine which might be brought forward, and in explaining the principles of Captain Ericsson's invention, he trusted that he should not be held responsible for the correctness of the various propositions which he would have to make ; at the same time, he was bound to state that, prior to the construction of the engine, one part of the invention was submitted to his opinion, and he had reported favorably ; and this was the possibility of transferring the heat contained in a current of air passing in one direction to another current of air passing in an opposite direction (separated only by metallic surfaces) ; but how far this might be usefully and economically employed in obtaining an engine of power, it was not for him to determine ; this question would be brought to a fair test when an engine of 50 horse power, now constructing, shall be set to work. Dr. Faraday then described the manner of transferring heat from one current of air to another by working models, and afterwards, by the aid of working diagrams, he explained the construction of Captain Ericsson's engine. Our having given a full account of this engine at page 42 of the present volume,* will render it unnecessary again to describe the principles on which this invention is proposed to work. Dr. Faraday having explained the various bearings of the question, concluded by observing that he was bound, in justice to his own character, to make a remark, which he regretted the more that it was possible and probable, had he been able to see Captain Ericsson prior to his entering into this explanation, he would have been able to remove a doubt and difficulty which he (Dr. Faraday) must confess he could not clear up to his satisfaction ; this had been prevented by the serious illness of Capt. Ericsson. What he referred to was, that he could not clearly see how the difference of pressure, stated by the inventor to exist, could be maintained in the different parts of the apparatus.

INSTITUTION OF CIVIL ENGINEERS.—The following are the subjects which have been under discussion at the Tuesday evening meetings :

"What are the advantages to be derived from the application of undulating railroads?"

After a full discussion (lasting two evenings), in which many of our best and most talented men took part, this question was dismissed with a general expression, that there were no advantages to be derived, but, on the contrary, a decided loss.

"Heating power of coal and other kinds of fuel: Have any experiments been made, or data collected, from which can be calculated the number of cubic feet of atmospheric air which one pound of good Newcastle coal will raise 1° of Fahrenheit?"

This subject has called forward considerable information, but nothing final has been determined on; but so far as we are able to judge, Tredgold's calculations may be depended on for their correctness.

"Velocity of currents of air: Is there any instrument for measuring correctly the velocity of air in motion; and if so, upon what principle does its action depend?"

Mr. Barwise explained an instrument constructed by him for this purpose, and promised to construct one for the institution.

The following are the subjects which stand next for discussion:

"Grouting masonry and brickwork: The application of it—how and when it ought to be used—the materials for it."

"The worm in the timber of piles, &c.: Driven in salt water, and the means of preventing it."

"Lock gates and sluices: With any late improvements in the materials or construction."

"Steam: Any substitute for it—Ericsson's caloric engine."

* For notices of this engine, see pages 147 and 194, vol iii., of this Journal.

View of a Cotton Scutching and Lapping Engine, on the most improved plan, the first one invented, by N. SNODGRASS, of Glasgow, in 1806. [Communicated by the Inventor for the Mechanics' Magazine and Register of Inventions and Improvements.];

EXPLANATION.

- 1, 1, Feeding table, with cotton weighed and spread upon it.
- 2, 2, Scutcher cylinders, 11 inches diameter, to run 1500 revolutions per minute, with covers of iron.
- 3, 3, Wire gauze cylinders, with covers, to spread the cotton, and let off the air generated by the scutcher cylinders.
- 4, 4, Feeding cloths and moving wooden rollers, to carry the cotton under the wire cylinders from scutcher to scutcher.
- 5, 5, Two cast iron rollers, 4 inches diameter, to compress the cotton before it is lapped up on roller No. 6, for the cards.
- 6, Cotton roller, for the carding engine.
- 7, An iron or wooden cylinder, about 15 inches diameter, under cotton roller, for winding up the same.
- 10, 10, A view of one side of the cast iron framing.
- 11, 11, Triangle ribbed hecke, for extracting the gins, &c. from the cotton, and allowed in Europe to be an important part of the scutching engine.
- 12, 12, Air apertures, for letting the generated air escape through the gauze wire covered cylinders.

..... This represents the cotton in process.

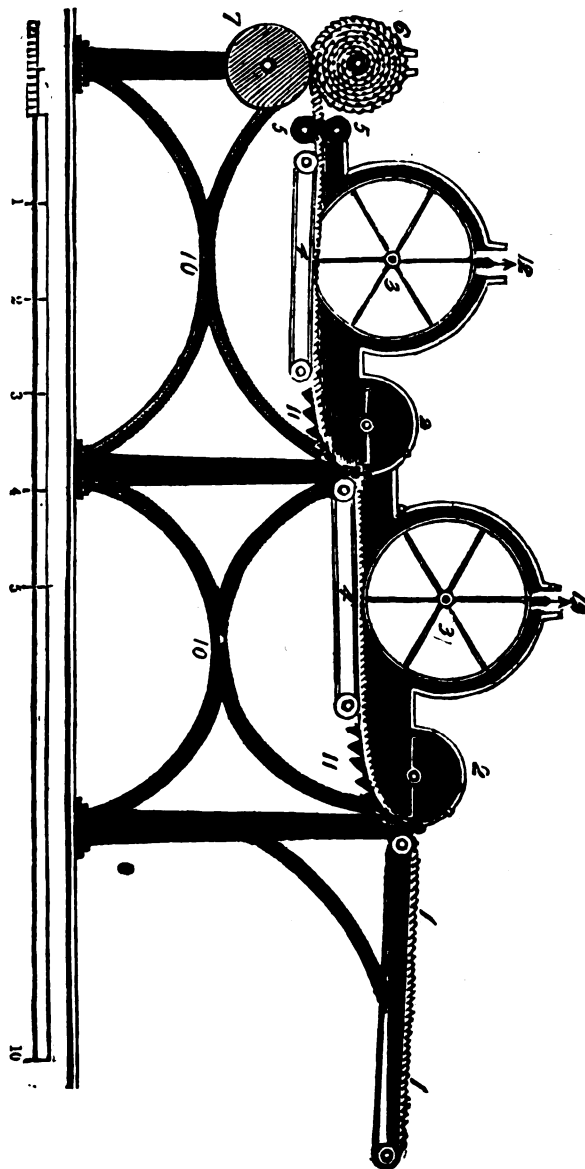
New-York, May 14, 1834.

TO THE EDITOR :

Sir,—A few weeks ago I took the liberty of sending you a plan (not mine) for blasting iron ore furnaces with hot air,* successfully in use in Scotland, whereby thirty-three per cent. of fuel is said to be saved; also, a plan of mine for heating factories on the best principles, by steam: in hopes these might benefit this rising country. From the same motive, I again send you another plan of a scutching (batting) machine, for opening, cleaning, and, in one operation, preparing it to be applied to the carding engines; the first one invented by me, in Messrs. G. Houston & Co.'s large spinning factories in the town of Johnstone, Scotland, in 1806, and successfully introduced to the spinning trade in Britain, and, *I believe*, never before in any publication.

The section plan annexed is drawn on a necessarily small scale, to suit the limits of magazines, and is only calculated to suit the understanding of the first rate cotton machine makers, such as Mr. Rodgers, &c. at Paterson. The plan shows all the essential working parts: the various complicated movements, &c. will be easily arranged by these gentlemen, and almost impossible to be exhibited in yours, or any other similar publication. All that I have to observe, in addition to the explanation accompanying the drawing, for the practical working of the machine, in cotton factories, is, that this machine should be made the same breadth of the carding engines, so that the finished lap, No. 6, would suit on applying it. Also, the first feeding cloth, Nos. 1, 1, should be divided into such parts as the manager of the work may think proper, then causing the person that attends the machine to weigh a certain weight of cotton, and carefully spread that weight on each of these parts, which has the effect of enabling the small scutching cylinders to open the cotton more regularly; and, finally, finish the lap, for carding, in the

* Which will be inserted shortly.—[Ed. M. M.]



most perfect manner, doing as much work, and better, with one person, than if more were employed, which is the case with those cotton factories I have been permitted to examine in this country. Also, from twenty-eight years' experience, I decidedly recommend, in no case, to make the scutcher cylinders more than *twelve* inches in diameter, and only with two blades. In the mean time, I am, Sir, yours, &c.,

NEIL SNODGRASS, 87 Pearl st.

THE NEW PIN.—There are few things which more strikingly exemplify the high point of civilization to which this country has attained than the amount of capital continually expended, the inventive talent exercised, and the powerful agencies employed, as the remedy of exceedingly small evils, and the attainment of equally minute objects of convenience. This remark cannot perhaps find a better illustration than in "The New Pin with an Immoveable Solid Head." The defect in the old pin, which it is the object of the present improvement to remedy, is that the head of the pin being separately spun and then put on, was liable to be detached by the pressure of the thumb. The principle of the improvement consists in this: that the head being formed of the

same piece with the body of the pin, the inconvenience attending its slipping is effectually prevented. This is the minute improvement in a minute article, the accomplishment of which has cost the patentees several years of attentive application, and the expenditure of a large capital, according to their own statement, which, when the extent and character of the machinery employed are considered, there can be no reason to doubt. At the same time, it must be taken in connection with this improvement, that the patent pin is altogether produced by machinery, instead of partly by hand processes. "The Patent Solid-headed Pin Works" are situated about a mile from Stroud, on the Bath and Birmingham road. The principal building consists of five floors, each of them one hundred feet in length, and completely filled with machinery. A large iron water-wheel, on which a stream acts with a power equal to that of forty horses, gives motion to all the mechanical apparatus, which is so ingeniously constructed as to perform every essential operation for converting a coil of wire into the perfect pin with scarcely any noise and little apparent effort. Upon the old system, this comparatively insignificant article had to go through fifteen or sixteen hands before it was finished; but this curious machine effects the whole without manual assistance, or any extraneous aid whatever; for the wire being placed on a reel, and the machine set in motion, all the mechanical combinations, so numerous and dissimilar in their movements, are simultaneously performing their various functions with a rapidity and precision truly surprising. While one portion of the apparatus is drawing out and straightening the wire, and cutting it off at the required length, another combination is pointing and polishing the pin, and another compressing a portion of the wire into dies to form a perfect and neat round solid head. The various movements are completely at command, and susceptible of instant alteration and adjustment to pins of any length, and heads of any form, while the machine is working at its ordinary speed. Each machine operates on four wires at once, and from forty to fifty pins are with facility produced in a minute by each of the 100 machines which are completed, and in constant operation at the works. As a more particular detail of the process would not be well understood without engravings, we shall only further state that the works, with the present number of machines, are capable of producing upwards of two tons of pins weekly, or, stating the amount numerically, 3,240,000 pins daily, 19,440,000 weekly, supposing all the machines to be in operation twelve hours daily. It is stated that altogether twenty millions of pins are daily manufactured in this country for home consumption and for the foreign market.—[Penny Magazine.]

A new locomotive of great power and masterly machinery has been constructed for the Newcastle and Fenchtown Railroad, by Mr. E. A. G. Young, of Norfolk. The Beacon states that on the first trial of the engine, notwithstanding the stiffness of the machinery, and without any headway being given to it, it ascended the inclined plane at Fenchtown, (the grade of which is 42 feet to the mile,) with a load of 55½ tons, at the rate of 12 miles per hour.—[Balt. American.]

The receipts of the Charleston railroad for the month of May amounted to \$18,300—passage money \$10,070—freight \$8230.

ILLUMINATED PRINTING.—In many of the old printed books, the initial letters, and occasionally other parts, were printed in red. This was done by two workings at press, and was an imitation of the earlier fashion of *illuminating* manuscripts. The practice is still followed in some almanacs, the saints' days and holy-days being "red-letter days." Some ingenious contrivances have been devised for working in various colors; and a few years since, a curious book was written and published on the subject by Mr. Savage. Still more recently, printing in gold and other metals has been practised. This is done by printing with a sort of size, and afterwards applying the metal leaf. Some very handsome specimens of this have been produced by Messrs. Howlett and Brimmer, of London; but, of course, the process is too costly and too tedious ever to enter into competition with common printing, or to be used for other than purposes of luxury.

VALUABLE DISCOVERY IN THE FINE ARTS.—Mr. Mudie, well known as an able literary compiler, has brought out a popular work on "the feathered tribes of the British Island," in which, amongst other attractive features, the vignettes on the title pages are novelties, being the first successful specimen (says Mr. Mudie) of what may be called Polychromatic printing, or printing in many colors from wooden blocks.

"By this method," he adds, "every shade of color, every breath of tint, every delicacy of hatching, and every degree of evanescence in the outline, can be obtained"; and fifty thousand fac similes of a painting may be produced with perfect uniformity and at moderate expense. The advantages to books, of which a large number is to be sold, will be very great, not only as removing the cost of tinging by hand, which is the same for the last thousand as the first, but by making the copies more alike and more durable, and rising more above the reach of the ignoble pecus of imitators. In these vignettes, Mr. Baxter had no colored copy but the birds, which are from nature. I made him work from mere scratches in outline, in order to test his metal; and I feel confident that the public will agree with me in thinking it sterling. In carrying this very beautiful branch of the typographical art successfully into effect, Mr. B. has, I believe, completed what was the last project of the great Bewick, but which that truly original and admirable genius did not live to accomplish."

THE PULSE.—Every one knows that among the numerous inquiries and examinations which precede the prescription of a careful physician, the state of the pulse is never omitted; yet, as it is probable that few of our readers are acquainted with the reasons for this inquiry, or, what is the same thing, with the facts to be learned from it, we think it may not be uninteresting if we enumerate some of the more prominent ones.

It is almost unnecessary to premise that by the pulse is meant the beat of an artery, and that the one commonly chosen for examination is the radial artery, which beats at the wrist. The first point generally attended to is the number of the beats; and since in this, as in all other medical questions, it is necessary to be acquainted with the state of health, in order to recognize any deviation from it, we must mention the ordinary frequency of the pulse at different ages. In the new-born infant, it is from 130 to 140 in a minute; but decreases in frequency as life advances; so that, in a middle-aged adult in perfect health, it is from 72 to 75. In the decline of life, it is slower than this, and falls to about 60. It is obvious that if we could suppose a practitioner ignorant of these plain facts, he would be liable to make the most absurd blunders, and might imagine a boy of ten to be laboring under some grievous disease, because his pulse had not the slow sobriety of his grandfather's. A more likely error is to mistake the influence of some temporary cause for the effect of a more permanent disease: thus,

in a nervous patient, the doctor's knock at the door will quicken the pulse some 15 or 20 beats in a minute. This fact did not escape the notice of the sagacious Celsus, who says, "The pulse will be altered by the approach of the physician, and the anxiety of the patient doubting what his opinion of the case may be. For this reason, a skilful physician will not feel the pulse as soon as he comes; but he will first sit down with a cheerful countenance, and ask how the patient is,—soothing him, if he be timorous, by the kindness of his conversation, and afterwards applying his hand to the patient's arm."—(De Medica, lib. iii. cap. 7.)*

Granting, however, that these sources of error are avoided, the quickness of the pulse will afford most important information. If in a person, for example, whose pulse is usually 72, the beats rise in number to 96, some alarming disease is certainly present; or, on the other hand, should it have permanently sunk to 50, it is but too probable that the source of the circulation, the heart itself, is laboring under incurable disease, or that some other of the great springs of life is irremediably injured.

Supposing, again, the pulse to be 72, each beat ought to occur at an interval of five-sixths of a second; but should any deviation from this rhythm be perceived, the pulse is then said to be irregular. The varieties of irregularity are infinite; but there is one so remarkable as to deserve particular mention. It will happen sometimes that the interval between the two beats is so much longer than was expected, that it would seem that one beat had been omitted: in this case the pulse is said to be an intermittent one. When the action of the heart is irregular, the beat of the pulse is so likewise; but it will occasionally happen that the latter irregularity takes place without the former one, from some morbid cause existing between the heart and the wrist. It is hardly necessary to observe, that, in all doubtful cases, the physician examines the pulsation of the heart as well as that of the wrist,—just as the diligent student, discontented with the narrow limits of provincial information, repairs to the metropolis to pursue his scientific inquiries.

The strength or feebleness of the pulse, its hardness or softness, and innumerable other qualities, might be discussed here; but, from the great difficulty attending any examination of these points, and the technical niceties involved in any thing more than a bare mention of them, we omit them. There is one point, however, which it would be unpardonable to pass over in silence: sometimes no pulsation can be felt at the usual part of the wrist. This may proceed from so great a languor of the circulation, that it is imperceptible at the extremities; or from the radial artery (the one usually felt) being ossified; or from an irregular distribution of the arteries of the fore-arm.

TO INCREASE THE STRENGTH AND FIRMNESS OF THREAD AND COARSE CLOTH.—The lixivium of oak has been employed for scarcely any other purpose than that of the tanner, and yet it is applicable to a great variety of uses. If thread, cords, nets, coarse linen, &c. be steeped in it, they acquire greater firmness and durability. Fishermen have long resorted to this. Nothing is more apt to spoil than skins, and yet this preserves them. It is the same with hempen and linen cloth: they contain much gummy and resinous matter, which, with tannin, forms an envelope, and thus adds to their durability. Linen ought not to steep more than eight or ten days in this solution: it acquires a very brown color. When this color fades, the operation may be repeated.

The best method of preserving nets and cordage is the following: Dissolve two pounds of Flemish glue in fifteen gallons of water, dip the nets, &c. into this solution, and then

* The lapse of eighteen centuries has not destroyed the utility, much less the beauty, of the eight books on Medicine bequeathed by Celsus to posterity; they are unrivalled for perspicuous elegance and laconic good sense. Celsus is one of the writers of the Augustan age, and is worthy of the times in which he flourished.

steep them in a strong solution of oak or chestnut bark,—the tannin combines with the gelatine, and forms, between the fibres of the hemp, a solid net work, which adds great strength to the cords. Any bark which contains tannin may be employed in making a decoction; so bones, parings of skin, remains of fish, &c. and generally all substances containing gelatine, may be used in making a gelatinous solution. Fishermen, who often throw away on the shore gelatinous fish, may use them for this purpose.—[Jour. des Connais. Usuelles.]

EFFECT OF OIL ON WATER.—The following is a secret worth knowing: In rough weather they (the fishermen of the Bosphorus) spread a few drops of oil on the surface, which permits them to see clearly to a great depth. I was aware that oil would calm the surface of the sea; but until recently I did not know that it rendered objects more distinct beneath the surface. A trinket of some value had been dropped out of one of the upper windows of our palace into the Bosphorus, which at this place was 10 or 12 feet deep. It was so small that dragging for it would have been perfectly useless, and it was accordingly given up for lost, when one of the servants proposed to drop a little oil on the surface. This was acceded to, with, however, but faint hopes of success. To our astonishment, the trinket immediately appeared in sight, and was eventually recovered.—[Dr. Dekay.]

SPONGE.—This well known marine production has been in use from very early times, and naturalists were long embarrassed whether to assign it a place in the animal or vegetable kingdom. Most authorities now agree in putting the sponges in the lowest scale of animal life. There are about fifty different species of sponges, of which nine or ten belong to this country. They are found in the Mediterranean and those seas in warm and temperate latitudes, diminishing in number and becoming of inferior quality on the approach to cold regions. They adhere to rocks in places the least exposed to the action of currents and waves, which the ebbing tide does not leave uncovered. The best sponges known to us are those which come from the Archipelago, where they abound near many of the islands, whose inhabitants may be said to subsist by the sponge-fishery, if we may so call it. At the Cyclades, for instance, sponge-diving forms the chief employment of the population. The sea is at all times extremely clear, and the experienced divers are capable of distinguishing from the surface the points to which the sponge is attached below, when an unpractised eye could but dimly discern the bottom. Each boat is furnished with a large stone attached to a rope, and this the diver seizes in his hand on plunging head foremost from the stern. He does this in order to increase the velocity of his descent; thus economizing his stock of breath, as well as to facilitate his ascent when exhausted at the bottom, being then quickly hauled up by his companions. Few men can remain longer than about two minutes below; and, as the process of detaching the sponge is very tedious, three, and sometimes four divers descend successively to secure a particularly fine specimen.

The best sponge is that which is the palest and lightest, has small holes, and is soft to the touch. By the old physicians, sponge was regarded as a cure for a long list of maladies; this last is now much abridged, though burned sponge, in which form only it is used, still has a place in the materia medica.—[Penny Magazine.]

PRESERVATION OF SKINS.—J. Stegard, tanner at Tyman, in Hungary, completely preserves raw hides from putrefaction, and restores those that are tainted, by applying to them, with a brush, a layer of pyroligneous acid. They absorb it very speedily, and it occasions no injury nor diminution of their value.—[Receuil Industrielle.]

AGRICULTURE, &c.

NOTHING MADE IN VAIN.—We have this week received the following communication, accompanied with a quantity of seeds, as referred to, for which we return the donor our thanks. From the date, we have no doubt but they were intended to have reached us earlier. The discovery of this way of procuring maple seeds is not only a matter of curiosity, but of economy; as we venture to say that it would have required the labor of one man at least one week, to have taken the shells from a quantity of seeds equal to those sent to us. We shall endeavor to have them planted, and will hereafter give the result.—[Goodsell's Genesee Farmer.]

Cultivation of the Sugar Maple and manner of procuring the Seed.

Mr. Goodsell,—Every one is delighted to see our native forests thickly planted by the hand of nature with this valuable and beautiful tree; valuable, because for cabinet work some varieties of this wood are superior to that brought from distant climes; first rate for fire wood, and as good for the manufacture of sugar as the cane plant. And who does not regret the destruction of the ax-man amongst them. Occupying the best soil, they are usually the first victims. But he who destroys should endeavor to produce anew. No native tree can be more easily cultivated than this, the seed being abundant and easily procured. It grows rapidly from the seed in open cultivated grounds, attaining the height of six feet in three years, and in twelve years the stems will measure from six to nine inches diameter. I send you a quantity of seed as a specimen; they are ready prepared for sowing, and are divested of the shell and wings; in their natural state, being connected together in pairs, they are usually called maple keys. About a peck is sufficient for seeding three acres of ground. Nature would seem to dictate the fall of the year to be the proper time for sowing the seed in their natural form, as the effects of the frost would be to soften the shell. At this season they are scattered abroad by the winds in infinite profusion. But divested of the shell and sown in the spring they will grow as surely as peas, and make their appearance at the time the forest trees put forth. They should be sown, or rather scattered upon the furrows of dry land, and harrowed in, and grass seed should be sown for future pasture. Hogs, calves, sheep, horses, &c., may be pastured among them, but no cattle, till they are out of danger. The third year, either fall or spring, they should be taken up, where too thick, and transplanted in vacancies. One thousand may commence growing upon an acre. In twelve years, an enterprising farmer, who wishes for the future prosperity of our country, as well as to enhance the present value of his lands, would walk five miles barefooted before sunrise in the month of June, to view the "sugar bush" of our climate, in full foliage, situated near the residence of the owner, sheltering his fruit trees and habitation from storms, and the resort of the songsters of the air. The leaves of the grove might be collected for the barn-yard. At the age of twenty-five years, the trees might be tapped. I was bred upon a farm, in a deep valley of the mountains, on the eastern border of this state, and have witnessed the growth of the sugar maple in groves from the seed, and also standing singly in fields, where they have stood for more than half a century, presenting a more beautiful appearance than the trees of

any land or clime. My occupation now is farming. As to the manner of procuring seed: I send you about one-fourth part of the winter store of a buck or wood-land mouse, which was deposited in a living hollow beach tree, 15 inches diameter; the whole of his store, being about one bushel, one half beach nuts, with a few other seeds, all shelled, and neatly put up for winter provision, and a nest within, lined with down, the residence of the family. A boy found another store-house the same day, which was 25th of December last, containing half a bushel of maple seeds, with others. Boys are skillful in such kind of hunting. In this way seed stores might be furnished with them from the maple forests of the west, in quantities sufficient to plant out territories and kingdoms. The buck mouse enters his habitation through a smooth hole an inch or less in diameter, into the hollow of the tree, sometimes nearer and sometimes further from the ground. At the commencement of cold weather and snow, the red squirrel visits the place daily, and endeavors with much chattering to gnaw through, to rob the mouse of his store. By this recent gnawing around the hole, and by tracking in the snow, the habitation of the mouse may be discovered. This little animal, also deposits vast quantities of elm seeds, in hollows of the branches and trunks of that stately tree. In the night season, when all his enemies sleep, except the owl, he is busily employed during the fall months, in running up and down the tree, and laying up his winter store. The habitation of the mouse is frequently occupied afterwards by the honey bee. Whenever the maple bears seeds, the mouse, in maple forests, is sure to have a proportion of them for his food. S. H. Clarendon, Jan. 25th, 1834.

CAPITAL REQUISITE IN FARMING.—Mr. Editor: Among the many causes assigned for ill success in agricultural pursuits, of which farmers are often reminded, there is one but rarely adverted to, and I suspect by many farmers has never been considered at all. And that is the absolute necessity of a loose capital to enable a farmer to cultivate his farm to any advantage. The amount of this capital should be nearly equal to the entire annual product of his farm, after deducting his annual gain, if there be any.

Suppose the entire annual product of a farm to be	\$1000
Deduct suppose annual profit	\$150
Deduct also such portion of the milk, butter, grain, potatoes, and sauce generally, as is used in the family during the same season of their production,	80
Leaving to be expended in living and working farm before receiving returns of produce of farm,	230
Now if the farmer himself is both able and willing to perform the labor of one good hired hand, it will be equal to about 200 dollars of this sum, leaving 570 dollars the least amount of loose capital that will suffice to carry him through the year, without being pinched or obliged to slight his work. The amount of wool, flax and provisions, reserved for the consumption of the family from year to year, is included in this sum.	\$770

As this is a subject of importance, and as I wish to be clearly understood, I will proceed a little further. Farmers who live so far from market as to find it impossible, or inconvenient to get the produce of their farms to market before winter (and these constitute a very large majority), it will be seen at once, must incur the entire expense of working their farms and providing for their families for the year, before they realize any thing worth naming from the produce of their farms. Their hired hands must be paid in autumn, if not sooner, and if they expect to get store goods and mechanics'

work at reasonable rate, they must pay as they go along. A farmer sells his pork, butter, cheese, grain, &c. from January to April. The cost of producing all these was paid, (or ought to have been,) the summer and autumn before. His sheep are sheared in May, and should he be able to convert their fleeces immediately into money, (which he cannot always do,) still the whole expense of producing this wool, excepting about two months spring pasturing, was paid the year before, a considerable portion of it the August before.

It cannot be denied that a farmer can get along after a fashion, with little or no capital, because it is done by thousands every year. Some may inquire how this can be possible if the foregoing statement be correct. A farmer without capital, in the first place, will not perhaps hire more than half as much labor as his farm requires; of course all his work is slighted, and all done out of season, and half crops is the consequence. When the time arrives for paying his laborers, perhaps he will get some things out of the store for them on trust, or borrow a little money to pay them in part, and put off paying the remainder until winter or spring, to the no small injury of his credit, otherwise he must force the sale of some of his scanty produce at a reduced price, to make out the pay. In the next place he buys of the store-keeper wholly on a long credit, and pays a price accordingly, say twenty to thirty per cent. more than the cash price. His dealings with the blacksmith, shoemaker, and mechanics in general, are after the same fashion. And thus he passes his life continually pinched for the want of a little money, incessantly harassed by duns, and once in a while is appalled by a tap upon the shoulder, though gentle it may be, of the practised hand of a constable. And for this he must pay the latter, and his co-worker the lawyer, a sum of money for which he has never received any equivalent. And thus he brings the year about—no, properly speaking, he never brings the year about. He is forever toiling to bring up the arrangements of the last year. Time has got the start of him by one year, and he in vain attempts to overtake it.

It is a common remark that small farms are more profitable than large ones; this in the abstract is not true. Though it is doubtless true that multitudes of farmers greatly injure themselves by enlarging their farms *without an adequate increase of capital*. How often do we see farmers who have in the course of years accumulated a little money from small farms, barely enough to enable them to cultivate their present farms to the best advantage, invest the whole of this very capital in more land. Thus making an increase of capital necessary by the very act which deprives them of the little they already possessed. Could farmers who are without a loose capital be persuaded to pursue a precisely contrary course to this, to wit, sell off so much of the land they already possess as will raise a sufficient loose capital to enable them to cultivate the remainder in a proper manner, it would increase both their profits and comfort.

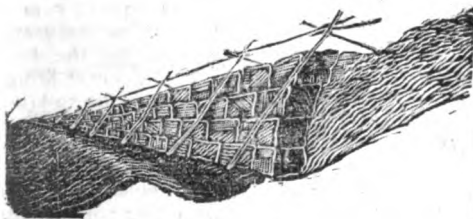
If any thing will excuse a farmer for mortgaging his farm, it is the hiring of money to work that farm. Though he ought in this case to be very certain that he is possessed of so much resolution and discretion, as to be in no danger of ever appropriating money so raised to any other use; so long as it is applied to this use only, it is not so very hazardous a plan. Before a mortgage can press heavily upon his farm, the money can be repaid, and at the worst he has only to return to his former method of farming by the halves, and without either satisfaction or profit. I do not wish to be understood as recommending to farmers the practice of raising money on mortgage. It is better with rare exceptions, where money must be raised, to sell off a portion of the farm, and preserve the remainder free from incumbrance.—H. W.—[N. England Farmer.]

A Cheap Method of making Fence of a Durable Character. By L. M. T. [From the New-York Farmer.]

If the ground be inclined in a direction opposite to that of the fence, begin by turning three or four furrows with a side-hill plough down hill; let them be thrown by the spade up the hill; plough three or four more on the same ground, and let them be thrown above the others; the ground will then present this shape—



Pick up your paving stones, if you have no better, or quarry about half as many as are requisite to make an ordinary $3\frac{1}{2}$ feet wall, and place them against the bank formed until you have a fence four feet high, and from nine to fifteen inches thick, and what is better, one which will not fall down, and which has been tested by the writer of this article to resist the frost, when all other methods of making stone walls have failed. The bank must incline one foot in the four, or four and a half, of height. This fence is made at less expense by one-half of stone, and one-third of ordinary wall in the price of laying. If designed to stop sheep, it must be staked and sided in this shape—

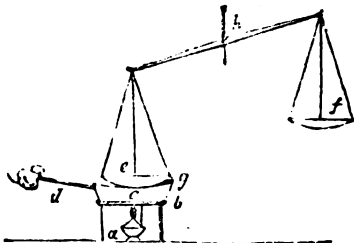


The same fence can be made on level ground, and has been by myself, when it will present nearly the above profile, staked and sided, and is effective against both sheep and cattle.

L. M. T.

Hoosick, Rensselaer co., March 21, 1834.

TESTS OF THE TEXTURE OF SOILS.—One of the best methods of ascertaining the capability of any soil to take up and retain moisture is that described by Mr. C. Johnson, for which purpose he employs the following apparatus.



a, is a small lamp; b, a stool, with a hole in the seat for receiving c, a shallow tin vessel, closely covered, but having a pipe, d, for the escape of steam; h is a pair of accurate scales, such as are used by apothecaries and goldsmiths. In order to employ this apparatus, put a small quantity of the soil to be tried upon the top of the tin vessel, in which water is kept briskly boiling for about half an hour, so as to thoroughly dry the soil by expelling its moisture. Take ten grains accurately weighed of this dried soil,

and add to it, by means of a quill, a drop or two of pure water; if distilled water can be had, so much the better. Weigh the whole a second time, which will now be a few grains above ten. Take out the weight of the water from the scale, leaving in the weights of the dried soil, and suspend the beam, so that the scale may rest on the lid of the tin vessel, the water in which it is still kept boiling; then with a stop-watch note the exact time which the added water takes to evaporate, as will be shown by the beam of the balance becoming level. Mr. Johnson found, that soils requiring less than twenty-five, or more than fifty minutes, to evaporate the added water, and bring the balance to a level, were always proportionally unproductive; the first, from having too much flinty sand, and consequently too few interstices to allow the water to escape.

Rich soil, treated in this way, required thirty-two minutes to bring the beam to a level; chalk, twenty-nine minutes; poor flinty soil, twenty-three minutes; and gypsum, only eighteen minutes.

A very fertile soil from Ormiston, Haddingtonshire, containing, in 1000 parts, more than half of finely-divided materials, among which were eleven parts of limestone soil, and nine parts of vegetable principles, when dried in a similar way, gained eighteen grains in an hour, by exposure to moist air, at the heat of sixty-eight degrees Fahrenheit; while 1000 parts of a barren soil, from Bagshot Heath, gained only three grains in the same time.

Mr. Johnson farther found that one hundred parts of burnt clay, when exposed in a dry state for three hours to air saturated with moisture at sixty-eight degrees, took up twenty-nine parts of water; that gypsum, in similar circumstances, took up only nine parts, and chalk only four parts.

Another method of testing the texture of soils is by taking what is termed their specific gravity; that is, comparing what they weigh in air with what they weigh in water. Sufficient accuracy for practical purposes may be obtained by drying two different soils, at an equal distance from a fire, or in an oven, at the same time, and then weighing in the air a pound of each in a thin bladder with a few holes near its top, or neck. When the weight has thus been obtained in the air, the bladder may be put into water, letting it sink low enough to permit the water to enter through the holes in the neck, in order to mix with the dried specimen of the soil. The weight in water, divided by the difference of the two weights, will be the specific gravity, and the less this is, the greater will be the capacity of the soil to take up and retain water. Muschenbroek thus found rich garden mould to be 1630 compared to 1000 of water, and Fabroni found a barren sand to be 2210 compared to 1000 of water.

Or fill a wide necked pint or quart bottle half full with water, and add the soil to be tried till the water rises to the brim. Then if the bottle can contain one pound of water, and gains half a pound additional when filled in this way, half with water and half with soil, the soil thus tried will be twice as heavy as water, and its specific gravity will be two. If it only gain a quarter of a pound, its specific gravity will only be one.

M. Giobert ascertained that a pound of fertile soil contained, of flinty sand, about 4,400 grains, of clay about 600 grains, of lime about 400, besides seventy of water, and about twenty-five grains of inflammable materials, chiefly carbon. On a comparative trial of a barren soil, M. Giobert found that a pound weight contained about 600 grains of clay, about 400 grains of lime, and little or no inflammable materials. Mr. Griesthwaite directs an equal portion of two soils, perfectly dry, to be introduced into two tall glasses, in the midst of each of which a glass funnel has been previously placed. The soils are to be put in so as to retain, as nearly as possible, their natural state when in the ground, and are consequently not to be too much pressed down. When this has been done, water is to be poured very gradually into each of the

funnels, and it will rise up as it does in a piece of lump sugar into the dry soil, as may be seen through the glass. The more rapidly the water is seen to rise, the better will be the texture of the soils.—[Professor Rennie.]

WHITE MULBERRY.—Experience and observation have demonstrated that the shade of mulberry trees is not injurious to the growth of grass, grain, or any other vegetable. This is an important discovery, and argues powerfully in favor of the means of raising silk.

I would advise, with humble deference, that every farmer procure mulberry seed, form a nursery, transform all his fences into mulberry hedges, and plant standard mulberry trees along all those hedges half a rod distant from each other. A farm of a hundred acres, fenced as above advised, would in a few years yield from the fences a crop worth several hundred dollars! These fences would be as cheap as any other a farmer could erect, would require no repairs, no renewal, so that all the produce arising from the leaves would be a clear profit. One hundred pounds of leaves would produce, in this country, one pound of reeled silk, judiciously fed, worth from four to seven dollars—the price being governed by the good or bad reeling. A single tree will produce from thirty to sixty pounds of leaves, depending on the growth of the tree, soil, &c.—[Village Record.]

On Hussey's Reaping Machine. By CYRUS H. M'CORMICK. To the Editor of the Mechanics' Magazine, and Register of Inventions and Improvements.

ROCKBRIDGE, Va., May 20, 1834.

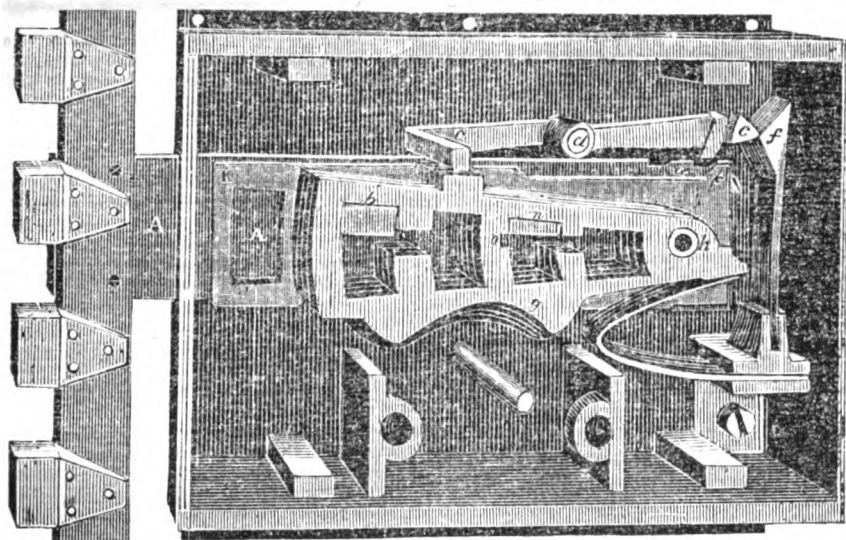
DEAR SIR,—Having seen in the April number of your "Mechanics' Magazine," a cut and description of a reaping machine, said to have been invented by Mr. Obed Hussey, of Ohio, last summer, I would ask the favor of you to inform Mr. Hussey, and the public, through your columns, that that principle, viz., cutting grain by means of a toothed instrument, receiving a rotatory motion from a crank, with the iron teeth projecting before the edge of the cutter for the purpose of preventing the grain from partaking of its motion, is a part of the principle of my machine, and was invented by me, and operated on wheat and oats in July, 1831. This can be attested to the entire satisfaction of the public and Mr. Hussey, as it was witnessed by many persons: consequently, I would warn all persons against the use of the aforesaid principle, as I regard and treat the use of it, in any way, as an infringement of my right.

Since the first experiment was made of the performance of my machine, I have, for the mutual interests of the public and myself, been laboring to bring it to as much perfection as the principle admitted of, before offering it to the public. I now expect to be able, in a very short time, to give such an account of its simplicity, utility and durability, as will give general, if not universal satisfaction. The revolving reel, as I conceive, constitutes a very important, in fact, indispensable part of my machine, which has the effect, in all cases, whether the grain be tangled or leaning, unless below an angle of 45° to the ground, to bring it back to the cutter, and deliver it on the apron when cut. Very respectfully, yours, &c.,

CYRUS H. M'CORMICK.

* For description and cut of this machine, see page 228 of this Journal.

EXPORTS FROM NEW-ORLEANS.—The Governor of Louisiana, in his late message to the Legislature, estimates the exports of New-Orleans for the year 1831, at \$31,700,000, as follows: Cotton 450,000 bales at \$55 . . . \$31,640,000 Tobacco 30,000 hhdts. at \$10 . . . 1,200,000 Sugar 70,000 hhdts. at \$65 . . . 4,550,000 Molasses 3,500,000 gallons at 20 cts. . . 700,000 And for western produce . . . 5,500,000 from the sum of which he deducts \$22,000,000 for home consumption—leaving the aggregate as above.



[From the Mechanics' Magazine.]

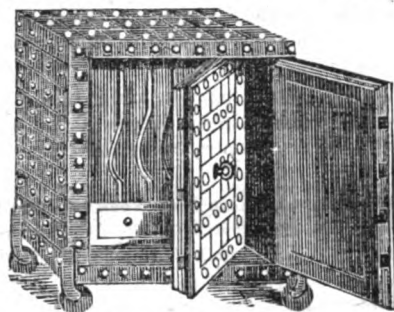
CHUBB'S PATENT LOCK.—The lock made by C. J. Gayler, of 102 Water street, New-York, of which a drawing is annexed, affords more security than any other yet invented, as it cannot be picked or opened with any false instrument; and its combinations are so extensive that tens of thousands may be made without making two alike.

Description—A A a, the bolt; b, the square pin of the bolt; c c, the detector, moving on the centre d; f, the detector spring; g, four tumblers, moving separately on the centre h, shown lifted by the key to the exact position for the square pin b of the bolt to pass, in unlocking. Should one or more of the tumblers be lifted by a pick or false key, in the least degree beyond their present position, the detector, c c, being thus overlifted, will, by the angle of the spring, f, pressing on the opposite side of the angle of the detector, force its hook into the notch a of the bolt, and be firmly held so, until disengaged by the regulating slide K k; in which case, by the introduction of the key, the tumblers are lifted to the regulating combination, and admit the stud n, affixed to the regulating slide, to enter the several grooves, o, in them; the bevelled end k of this slide, by the same movement, pressing against the hook of the detector, disengages it from the notch a of the bolt.

It possesses the four principal requisites of a good lock, namely, security, simplicity, strength, and durability; its security, particularly, is increased beyond calculation, by an improvement (the detector) which not only renders it impossible to be picked, but also detects the first attempt to do so, thereby preventing those repeated efforts to which all other locks are exposed: at the same time it will be noticed that the thief, in making the attempt, renders the lock more secure, for if the detector is (as it must be in such cases) overlifted, it will force its hook into the bolt, and will there remain until it is disengaged, which can only be done with the true key, in the following manner: the key must be turned half way round in the lock in the same way as in locking; then turn back again, and then turn round in the usual way to unlock. If an attempt has been made to pick the lock, the detector will be overlifted, and catch in the bolt; this circumstance will at once be known, when the true key will not open the lock until the detector is disengaged in the way above

mentioned. As to its durability, it is not liable to be injured by constant use; this has been fully ascertained by a lock having been locked and unlocked by steam power four hundred and sixty thousand times without receiving the least injury.

Mr. Gayler makes use of this lock in all his Double Fire Proof Chests, of which the annexed engraving is a correct representa-



tion. They have been several times tested by fire, and have afforded perfect security to valuable books and papers. They are now in use in upwards of fifty banks in the United States, as well as in record and other public offices, and for such purposes are preferred to vaults, as they are equally safe against fire, are free from damp, and can be removed from one building to another with little trouble or expense.

NEW-YORK AMERICAN.

JUNE 7-13, 1834.

LITERARY NOTICES.

THE FROLICS OF PUCK, 2 vols. N. Y.—Harper & Brothers.—A re-publication from an English work. There is much cleverness in these tales; and the evidence, both of good writing and considerable powers of invention—all which, in our judgment, would have told better, and been more consonant with the taste of this matter of fact age, by the omission of the goblin machinery altogether.

Puck, having offended Queen Titania, is banished from fairy land till he should be able to solve the riddle "what pleases woman most." The answer, according to Frolic the First is, that "it is her lover." This answer, the termination of Frolic the Second, renders rather doubtful in Puck's eyes. The third implies love for her husband to be the chief passion; but the riddle in the fourth, is finally thus solved by Puck:

Be she young or be she old,
Warped, or formed in beauty's mould;
Be she widow, wife or maid,

By whatever temper swayed,
Woman's master passion still
Is—to have her sovereign will.

PAPER AGAINST GOLD, or the history and mystery of the Bank of England—by WM. COBBETT. 1 vol. N. Y.: JOHN DOYLE.—There is no living writer of more power than Wm. Cobbett, whatever be the subject he handles. In the papers embodied in this vol.,—and which were written 20 years ago when he was a State prisoner in Newgate, for having attempted to excite the hatred of the British nation against the German soldiers, then incorporated with the British army, and a portion of whom had been just employed in putting down a mutiny in a British regiment—the danger, and fraud indeed, of a paper circulation irredeemable in specie, are set forth with admirable clearness and effect. In this country, where the tendency—by multiplying banks and straining to their utmost their issues—is to induce many of the evils of a paper circulation unsustained by a specie basis, these essays should be read, and may be productive of good—though as long as the restraining law of this State exists, and the right to grant bank monopolies is held and exercised as a political instrument, there will be little room for the operation of mere reason.

THIRTEEN SERMONS, by Wm. Cobbett, M. P.; 1 vol: New York, John Doyle.—We have here the same vigorous and lucid pen applied to various subjects, and in the guise of a teacher of morals and religion. A single extract upon Gambling will exemplify the style and manner of these sermons, so called:

Gaming is sometimes called play; but, what is it in reality? What is the object of every gamester? It is to gain by the loss of another. The object is not to effect an exchange of one thing for another. It is not to render value for value, in any way or under any form. The object of every gamester is, to get by doing injury to his neighbor. It is to get his money or his goods from him without yielding him any thing in return; and this, disguise it under what name we may, is extortion and fraud.

This is not less its character because it as often fails of success as it succeeds in its purpose. The thief is not less a thief when he fails than when he succeeds. It is the intention in both cases that constitutes the crime; and, as to the chance that you give your neighbor, you think that it is not so good as your chance; for, this is the very principle upon which you proceed. This thought must necessarily exist in your mind, or you are destitute of motive altogether. You conceal from your neighbor the fact, that you have reason for expecting to get his money from him. You practice deceit from the first to the last; and your sole object is your own private gain to be effected by his loss.

Pretenders to religion, who are at the same time gamesters, are by no means few in number. If, instead of persecuting their neighbors for difference of opinion on points of doctrine, they were themselves to pay attention to the uniform language of Scripture on the subject of deceit, and especially of deceit practised for the purpose of unjustly extorting from our neighbor his money or goods, they would, perhaps, cease both to game and persecute. In Leviticus, ch. iv. the law is clearly laid down.—We are in no case to deceive our neighbor; and, if we have gotten any thing from him deceitfully, we are to restore it with the fifth part in addition; and then, atonement being made, forgiveness is to be obtained.

Now, the very essence of gaming is deceit. It is impossible to gain, except deceitfully; for there is deceit in the motive. And, as to the manner of accomplishing the end, it presents, perhaps, the strongest possible proof of meanness and baseness of mind. Feigned pleasure, feigned sorrow, feigned applause and feigned reproof: all is false: looks that lie, the lies being too refined to be trusted to the tongue. And all this for the base purpose of gain at your neighbor's expense, and possibly by means of his ruin! From such a school, who is to expect sincerity, uprightness, or even common humanity? Accordingly, it is invariably found, that gamesters are amongst the most unfeeling as well as the most fraudulent of mankind. In Virginia and the slave-states of America, nothing is more common than to see the gamester whose purse has been emptied, call in a domestic slave, man,

woman, or child, as a stake to be played for against a sum of money. Thus the drawing of a card, or the turning of a die, may, and frequently does, separate instantly, and for ever, wife from husband, and child from parents! Look at the poor creature that stands trembling by, awaiting the result of the game; and then find, if you can, words to express your abhorrence of those who can give to a deed like this the appellation of *play*!

LA REVUE FRANÇAISE for May. New York: HOSKIN & SNOWDEN.

THE KNICKERBOCKER for June. New York, J. Disternell.

THE UNITED STATES MILITARY AND NAVAL MAGAZINE for June. Washington, D. C.: BENJAMIN HOMANS.

MECHANICS' MAGAZINE AND REGISTER OF INVENTIONS AND IMPROVEMENTS, for May. Edited by JOHN KNIGHT. N. York: D. K. MINOR & J. E. CHALLIS.

These are the only periodicals on our table at present. The first named is a good number. Its leading article, upon the financial administration of this country, though written by a *Frenchman*, will, we suspect, impart information to a great many *Americans*, well-informed though they be. It reproduces and re-examines the statements of the controversy respecting the relative expenses of the French and American governments, between M. Saulnier on the one side, and Gen. Lafayette, Gen. Bernard, and J. Fenimore Cooper on the other.

The *Knickerböcker* for this month is good merely. The conclusion of the paper on *Talleyran*, if authentic, is very interesting. From the article on Peace Societies, we make an extract, exemplifying the contradiction and inconsistencies of war by a striking incident connected with the battle of Navarino.

Another trait of mad incongruity, and, seen its true light, of disgusting contradiction, ensues. While the fight lasted, mercy and humanity would have been crimes. The only duty, the only heroism and perfection of military attainment, is to kill. But the moment the battle is over, the point of honor is reversed; and the perfection of bravery and honor is to expose life, and manifest an intrepid recklessness to danger to save the very victims, which, but a few moments before, it was duty in every possible way to attempt to destroy. A recorded incident, after the battle of Navarino, will show how this incongruity impressed a race whom we are accustomed to consider as barbarians. After the firing had ceased, Sir Edward Codrington, the English admiral, sent a lieutenant on board Moharem Bey's ship, to offer any medical or other assistance they might want. This vessel, probably with a crew of more than a thousand men, had but one medical officer on board, and he, unfortunately, had been killed among the first in the action. Her loss had been immense, and they had not thrown the dead overboard, nor removed their wounded to the cockpit; and the deck presented a most horrible scene of gore and mangled bodies. Amidst this frightful spectacle, about a dozen of the Turkish officers, superbly dressed, sat in the cabin upon crimson ottomans, smoking with inconceivable apathy, while slaves were handing them their coffee. The English officers presented their Admiral's compliments, and offered any assistance. The chief Turkish officer replied with frigid composure, 'that they stood in no need of any assistance whatever.' 'Shall not our surgeon attend to your wounded?' 'No,' gravely replied the Turk. 'Wounded men need no assistance. They soon die.' Returning to the *Asia*, Sir Edward Codrington's ship, and communicating the result of their mission, they were ordered back to bring with them the Turkish admiral's secretary, and some other officers, with whom the English Admiral held a long conference. When it was closed, the English lieutenant was ordered to land the Turks wherever they chose. Rowing them ashore about day-break, they saw the wreck of a mast, on which a score of wounded or exhausted Turks were endeavoring to save themselves. 'I must rescue these poor fellows,' anxiously exclaimed the lieutenant. 'They are only common soldiers, and will soon die. Never mind them,' said the Turkish secretary, with the utmost composure. 'But it is my duty to mind them; and should I not attempt to relieve them, the Admiral would reprove me and I should disgrace the service.' Having said this, the boat was ordered to pull towards the mast, and the lieutenant succeeded in saving about a dozen of these unhappy wretches. As soon as they were stowed in the bottom of the boat, the Turkish

officer, after a short but apparently profound meditation, burst into an immoderate fit of laughter. 'What is the matter?' exclaimed the astonished lieutenant. 'What, in the name of heaven, is there to laugh at in saving these poor fellows?' 'What to laugh at?' replied the Turk in a tone of the bitterest sarcasm.—'Laugh! by Allah! Are not you English a consistent people? Yesterday, while we were quietly taking our coffee, you opened upon us your cannon, and knocked our ships to pieces, and killed or mangled our men, until the fleet is one vast slaughter-house; and this morning you have suddenly become so humane, that you cannot pass a score of wounded soldiers without putting yourself out of the way to save them?'

The *United States Military and Naval Magazine* continues—we cannot say to flourish; for the Editor says in this number, that the encouragement he has hitherto received, scarcely pays the expenses even of printing—but to appear regularly, and to furnish evidence that it deserves to live, even though it should die. We hope better for it, however; for it is a publication in which the pride of both services should be enlisted, to make it what they can make it, if they choose, a valuable and useful miscellany.

The *Mechanics' Magazine* is full, as usual, of all sorts of information respecting inventions for the benefit, convenience or safety of the human race. There is, among other curious things, in this number, a scheme for raising vessels or goods sunk in deep water, by means of air buoys sent down by a diving bell in a collapsed state, and then inflated under water by means of a tube communicating with the air forced from above into the diving bell. In this way, a number of balloons, for so they become, are to fly upward with their freight. If there be a spark of mechanical ingenuity in the mind, it seems to us impossible that this magazine can be even casually glanced at, without awakening it into full energy.

PLAN OF THE CITY OF NEW YORK IN 1733; by J. Hayward, Courtlandt street.—This, in the present state of the city, is quite a curiosity. It is lithographed from the original in possession of G. B. Smith, the Street Commissioner, and gives a view of the city when Dey street was about its northern extremity on that side. As a point of comparison from which to measure our onward march, this is quite striking.

NURSE'S MANUAL AND YOUNG MOTHER'S GUIDE, by RICH'D S. KISSAM, M. D.; Hartford, (Ct.) CROKER & Co.—A useful little volume for those to whose use it is dedicated. It is plainly and sensibly written, free from hard words, technical terms, or the affectation of science, and will do good extensively, if read and followed.

NEW MUSIC.—Of this we have, for the week, the following pieces from JAS. L. HEWITT:

"Not worlds on worlds in Phalanx deep," a sacred song; the words by Cowper, music by W. A. King.

"The old oak tree," a ballad, by Haynes Bailey; music by C. Herbert Rodwell.

"May you be happy;" words by Chas. Jeffreys; music by C. A. Hodson.

"L'esperance," a Waltz for the Piano; by Geo. B. Cogdell, of S. C.

"Zitti Nessun que ve," and "Ah come Nascondere," both from *Matilde Corradino*, and arranged for two performers on the Piano; by M. C. Mortellari.

"The Crusader's Bride," a cavatina, sung by Mr. Wood; music by C. A. Hodson.

We conclude the Review today, which, by reason of other indispensable occupations, we have been prevented from making more comprehensive this week, with the following curious paper on

INQUIRIES respecting the Weight of Man at different Ages. By M. Quetelet.

The Statistical Researches of M. Quetelet are well known to the public. They possess the rare merit

of at once being very exact and well arranged, even in the most minute details, and in investigating certain very important scientific and philosophical questions. Accordingly, in estimating, with more precision than had been done, the weight and the average stature of the male and the female, at different ages, (or different periods of life) and among different nations, M. Quetelet, as well as M. Villermé and other savans, have not been desirous to satisfy a vain and trifling curiosity; they have deduced principles relating to the health of man in different circumstances, to Hygiene, to the laws of conscription, and even to the fine arts. Under the last relation, which appears a little foreign, this is the manner in which M. Quetelet expresses himself in the preamble of the work of which we speak.

"In order to produce a work which may be truly capable of touching us, and of affecting our passions, we must know man, and above all, the man whom we would represent. To take a single example, the artist, who has studied only the type of the Greek physiognomies, however admirable in other respects this type may appear to us, if he reproduces it in modern subjects, it will be cold and ineffectual upon the spectator, who will perhaps admire the art and composition, but will not be deeply affected. The Greek figures, however varied they may be, on account of age, passion, and sex—have, notwithstanding, an air of family, which carries us back towards antiquity, in spite of ourselves, and withdraws our attention from the subject which we would represent.

"If one endeavors to make them, the anachronism will become more sensible. Artists at the commencement have comprehended this necessity of painting what they had under their eyes, and it is in this way that they have produced effects so magical. The noble and severe figure of Christ has nothing in common with that of Apollo nor of Jupiter of the ancient mythology. A virgin Mary of Raphael has an enchanting grace which yields to nothing in the most beautiful ancient forms, and they exert on the imagination a greater influence, because they are more conformable to nature by which we are surrounded, and because they act more immediately upon us. We ourselves in climates more remote, perceive the need, in retracing our national actions, not to present Greek or Italian figures in the midst of a battle, in which we find men, almost all of the same age, all alike covered with warlike apparel, our eye seeks to recognize, from the features and expressions of the physiognomies, the Frenchman or the Englishman, the German or the Russian. Even in the French army, the soldier of the Old Guard had a physiognomy which had become classic, and which was identified in some measure with the remembrances of the empire.

"It is certainly to the little attention that has been given to the study of the shades, by which the physical and moral qualities of man pass among different nations and in different ages, which gives rise to that monotony and coldness of the greater part of the works of the imagination. We have, indeed, perceived the necessity of studying nature, and of being true; but, I think we have not remarked sufficiently that nature is not invariable. The ancients have represented, with infinite skill, physical and moral man, such as he existed then; and the greater number of the moderns, struck with the perfection of their works, have believed that they can do nothing better than servilely imitate them; and they have not considered that the type had changed, and that, in imitating for the perfection of the art, they had another nature to study. Hence this universal cry, 'Who will deliver us from the Greeks and Romans?' hence this violent schism between the classics and the romantic; hence in fine, the need of a literature which would truly be the expression of society. This great revolution is accomplished, and it furnishes a proof the most unexceptionable of the variability of the human type, of *Homme moyen*, among different nations and different ages.

"Thus the determination of average man is not useless, even for the fine arts and letters, and he who would arrive at this determination, will have no difficulty to make artists and litterati listen to him. He would teach them to know, in a more precise manner, things which they already know vaguely: he would teach them other things of which they are ignorant, or at least he would rectify their judgment concerning a multitude of prejudices. They would receive these, in the same manner as a painter learns perspective, which, under its geometrical form, is far from being picturesque also. Moreover, they have received the researches of Gall and Lavater, with more eagerness, perhaps, than the savans themselves; it is even to their care that we owe, in a

great measure, the knowledge of the proportions of the different parts of the human body as respects age and sex."

In the little work in which we find these general considerations with others which we are compelled to omit, the author investigates what concerns the development of the weight of man in the same manner as he has determined his growth, his inclination to crime, the succession of generations, &c. Afterwards he will publish new inquiries concerning the strength, swiftness, and other qualities of the human species; inquiries which, in order to be exact, must be made by many associated observers, and upon a great number of individuals. Physicians and engineers have been sometimes led to estimate the weight of men arrived at maturity, and considered, for example, as burdens placed upon a building, or as weights acting on a machine. La Hire has made very remarkable researches of this nature. On the other hand, the legal practitioner must often be occupied with this subject, for one of the most frequent problems is to determine after death, the probable age of an individual, from the assemblage of physical qualities. On this grave question, we are generally reduced to the estimation of practitioners more or less vague; but if, in a case of infanticide, for example, we stated in the process, verbal the weight and stature of the infant, as well as those physical characters susceptible of measure, and as we might have by the side of that, well constructed tables, which would give us for the different ages, the values of these physical qualities and their mean variations, we would have terms of comparison which would be better than the appreciation of practitioners, or which would serve at least to control their assertions. We see from these examples, that the inquiries concerning the weight of man, have more than one application.

The observations of M. Quetelet were made at Brussels in the Maternal Hospice of St. Peter; he compares them with those made at Moscow and Paris, in similar hospices; and he finds little difference between the means obtained. Unfortunately the Russian and French practitioners have not distinguished, with as much care as M. Quetelet, the sex, the stature, and the weight of children observed at their birth. This renders the results less capable of comparison. M. Quetelet found for sixty-three male children, and fifty-six female, newly born, the following quantities,

	Weights.	Stature.
Male children	7.057536 lb. Avoird.	1.62732 feet.
Female do.	6.4179468	1.58467

The extremes are—

Boys.	Girls.
Minimum, 5.1608232 lb. Avoird.	2.4701376 lb. Av.
Maximum, 9.92466	9.36329

The mean weight without distinction of sex, is 6.7377414 lb. Avoird. It has been found at Paris on 20,000 observations, 6.74656332 lb. Avoird.

Q. Quetelet has made similar inquiries concerning children from four to twelve years of age, in the schools of Brussels, and in the orphan hospital—concerning young people in the colleges and in the medical school—finally, concerning old men in the magnificent hospice which has been constructed in the same city for a period of four years. The results have been completed by observations made upon isolated individuals, taken by chance from the mean of all these data. The author has been able to construct tables, which show the mean stature, the mean weight, as well as the minimum and maximum, at each age, and for both sexes. These tables show that there exists at each age, and for each sex, a constant relation between the mean weight and the mean stature, from which the author has constructed another table, more exact than those which result directly from observations on the weights. It follows, from the mean stature formerly observed by the author, for the whole population, or at least from a number of individuals much more considerable than in these last inquiries, and gives the mean weight corresponding to each stature, according to the observations which make the subject of this memoir.*

The following is a table, which we may consider as exact for the whole population of Brussels, and which, for want of a table of this sort, calculated for other countries, may serve, at least, as an approximation for the Caucasian race, and in a temperate climate.

A TABLE of the Development of the Stature and Weight.

Years.	MALES.		FEMALES.	
	Stature. Imp. Ft.	Weight. lb. Avoird.	Stature. Imp. Ft.	Weight. lb. Avoird.
0	1.64045	7.65736	1.60764	6.4179468
1	2.90007	90.841766	2.26382	19.3851692
2	2.58519	95.0101439	2.56238	23.5324716
3	2.83469	97.5093356	2.79532	26.0986093
4	3.04468	31.3839804	3.00109	26.67194
5	3.24153	34.7804194	3.19559	31.6706928
6	3.43511	38.7967752	3.38861	35.98768
7	3.62530	49.984168	3.56305	38.6841192
8	3.81240	45.7857648	3.74351	42.0805584
9	3.99492	49.954192	3.92607	47.1040598
10	4.18314	54.0783608	4.09457	51.8768900
11	4.3636	59.768508	4.26180	56.570592
12	4.54404	65.7671136	4.43005	61.7647136
13	4.79193	75.8244024	4.60310	72.6485112
14	4.89838	85.4844048	4.76714	80.941116
15	5.07397	88.69745894	4.91807	89.035376
16	5.29273	109.5461916	5.03618	96.0927636
17	5.36090	116.558618	5.10179	104.3412588
18	5.43973	127.507013	5.13132	112.5458444
20	5.49329	132.4611988	5.15757	115.3094946
25	5.51191	138.7909564	5.17398	117.5079744
30	5.52503	140.378809	5.18054	119.8327284
40	5.52503	140.4939116	5.18054	121.8866004
50	5.49322	139.8507608	5.03946	123.9807568
60	5.37740	130.074319	4.97384	119.757564
70	5.32490	131.2701696	4.96738	113.6642748
80	5.29219	127.5492084	4.84103	106.884576
90	5.29219	127.5492084	4.93775	108.8183892

We see, from this table, 1st. That, at an equality of age, the male is generally heavier than the female; towards the age of twelve years only, an individual of either sex has the same weight. 2dly. That the male attains the maximum weight about the age of forty years, and that he begins to lose, in a very insensible manner, towards his sixtieth year; that, at the age of eighty years, he has lost about 13.23288 lb. Avoird., the stature being also diminished 2.75604 inches. 3dly. That the female attains the maximum weight later than the male, towards the fiftieth year. 4thly. That when the male and the female have assumed their complete development, they weigh almost exactly twenty times as much as at the moment of their birth, while their stature is only about 3 1.4 times beyond what it was at the same period.

Children lose weight during the three first days after their birth; at the age of a week they begin sensibly to increase; after one year they have tripled their weight;—then they require six years to double the weight of one year, then thirteen to quadruple it.

To calculate the burden of an edifice, or a bridge covered with a crowd, it is well to know that the mean weight of an individual, whatever is the age or sex, is about 98.584956 lb., that is, 103.65756 lb. Avoird. for the males, and 93.7328 lb. Avoird. for the females.

During the development of individuals of both sexes, we may regard the squares of the numbers representing the weights, at the different ages, as proportional to the fifth powers of the statures.—After the complete development of individuals of both sexes, the weights are almost the squares of the statures.

The weights have varied, in the extremes, among individuals regularly conformed, from 1 to 2, whilst the stature has varied only from 1 to 1 1/3.

The inferior parts of the body are developed more than the superior. In a child, the head is equal to a fifth part; and in a full grown man, to an eighth of the whole height of the individual. It appears from a note at the end, that these proportions, vary a little among different nations; but M. Quetelet, who, in his preliminary observations, explains very well the importance of these inquiries to the fine arts does not appear to have written this work purposely for them. The activity which he has exhibited in his researches, make us believe and hope that he will resume them at another time.

This little interesting work is terminated by data concerning the weight of human bones, which be longed to individuals of different ages, a very important subject in certain cases of legal medicine.

LATE FOREIGN NEWS.—The *Sylvanus Jenkins*, packet, from Liverpool, of 8th ult., brings intelligence that may be deemed decisive of the struggles in Portugal and Spain, in favor of Donna Maria and the young Queen.

The strong places in Portugal which held out for Miguel, have almost all fallen, and Don Carlos, the pretender to the Spanish throne, had embarked, it was said, or was about to do so, for England; thus leaving the Queen Regent free to make such terms with the liberal party in Spain, as they may have the strength to exact; for we believe not much in the voluntary concessions of legitimacy to liberty.

We are concerned to find the following paragraph

from the London Times, indicating as it does, most criminal negligence on the part of one of our frigates:

The London Times of the 10th contains, the following extract of a letter from Toulon, dated May 1,—"On the celebration of the King's fete, the following melancholy accident occurred.—At 12 o'clock, all the batteries and the ships in the roadstead fired salutes. Two American frigates here also paid the same compliment to the day, but unfortunately the gunners of the Constellation forgot that some of their guns were loaded with shot, and firing within pistol shot of the Suffren, one of the balls entered a port hole, killed one of the sailors, and carried away the leg of another. Some of the shot entered the hull, and five or six men were wounded by splinters, and obliged to be sent to the Hospital.

The London Globe of the 8th, says—We have great satisfaction in stating that a telegraph despatch has been received at Paris from Bayonne dated the 6th inst. announcing that Don Carlos had embarked for England, and that the affairs of Portugal had been arranged between Don Miguel and Don Pedro. The intelligence was brought to Bayonne by the French Secretary of Embassy, who left Madrid, on the 3d.

The Liverpool Journal of the 1th May says, We have great pleasure in announcing the probable cessation of hostilities in the peninsula. The Lord Nelson, in five days from Lisbon, has arrived at Dartmouth, with news that the Pedrites had taken Figuera,—that Coimbra had declared for Donna Maria,—that the whole of the road from Oporto to Lisbon was open to the Pedrites—and that Don Miguel and Don Pedro had come to a settlement, an armistice having been agreed to. Nor is this all, a telegraph despatch was received at Paris on the 6th instant stating that Don Carlos had embarked for England; it also corroborates what we have above mentioned respecting Portugal, for the Despatch says, "The affairs of Portugal have been arranged between Don Miguel and Don Pedro." These letters by the Lord Nelson confirm the fact respecting Don Carlos and say that he had placed himself under the protection of the English.

The news reached Paris from Bayonne, whither it had been brought by the French secretary of legation, who had left Madrid on the 3d instant. Coming to us, from two sources, besides its extreme probability, we are inclined to give it every credence. We understand that the ratification of the convention between the four powers would be immediately and finally executed.

The Irish Tithes Bill as it is called, came up for discussion in Parliament on the 6th, and on deciding for a second reading the vote stood 288 to 52, majority in favor 196.

The letters from Paris, of Tuesday's date, bring the prices of the French funds very firm, the five per cent. Rentes having closed at 105f. 45c and the three per cents, at 79. 25c. Spanish Cortes bonds, which closed at 30 8/4. The Portuguese Regency were at 77.

Reduction of the four per cents. Public announcement has at length been made of the plan for the reduction of the four per cents.

Of this plan, in the form now proposed, a favorable opinion is generally expressed in the city, as a plain straightforward measure, manifesting a proper confidence in the resources of the country, and not threatened with any serious objections or difficulties in the course of its execution. It is obviously indispensable to its success that the 3 1/2 per cents. should raise to par at the least, as all persons would otherwise be dissenters to the conversion, and in this there are some persons certainly who anticipate difficulty, but we suspect the measure has been prepared with too much foresight to leave any probability of it, and that a command of money is in reserve far greater than there are likely to be dissenters to call for. At present there is an actual advantage to be made in the sale of the four per cents., and by investing the money in the existing 3 1/2 per cents., of about 5.8 per cents.; but a few operations of this kind would soon do away with that advantage, and bring the stocks to the same level. The union of the new stock with the large mass of the existing 3 1/2 per cents., though the dividends are at a different quarter of the year, is held to be a judicious feature of the measure, and has been adopted, without doubt, because the other class of 3 1/2 per cents. are redeemable at the will of the government; while the others, with the four per cent now converted, are not redeemable till the year 1840. A further conversion therefore, and on a much larger scale than this, is looked for early in the next year.—[Times.]

*The author cannot consider the results obtained in hospitals and public schools as very exact as to the mean stature of the population, because inquiries made by him concerning a great number of individuals have proved to him that the mean stature is a little more among individuals in easy circumstances than in the indigent population, who have recourse to hospices, hospitals, and gratuitous schools,

The death of *Lander*, the latest adventurer in Africa, has been before mentioned in this paper; annexed are the particulars of that death. It is grateful to be able to add, that the British Government have conferred a pension of £70 on his widow, and one of £50 on his infant daughter.

AFRICAN EXPEDITION.—Death of Mr. Lander.—We regret to learn that intelligence has been received of the death of the enterprising African traveller, Richard Lander. He was fired upon and severely wounded by the natives on the Nunn river, where he had gone for the purpose of trade, early in the month of January, and he died at Fernando Po. on the 2d of February. The following extract of a letter from Captain Fuge, of the Crown, contains all the particulars of this melancholy event that are yet known. Mr. Lander was buried by Capt. Fuge on the day he died.

"Mr. Richard Lander expired at Fernando Po. on Sunday, the 2d of February, on his way up into the interior with a schooner boat, loaded with goods for trade, and two canoes which were towed from Cape Coast by the cutter Crown. He was attacked on all sides by bushmen, all armed with musketry. One white and two black men were killed; one woman and child, with a boy were taken prisoners. Mr. Lander and the remainder fortunately managed to get into one of the canoes and pull for their lives. Mr. Lander received a shot in his hip; a seaman and two Kroomen were also severely wounded. They left the Crown to proceed up the river on the 13th, and returned to the cutter on the 21st of January. They lost every thing belonging to them, excepting what clothes they had on. Mr. Lander lost all his papers, not one remains to be shown. The Crown got under weigh, and arrived at Fernando Po, on Sunday the 26th. Mr. Lander's wound had mortified, but he died quite composed."

Lt. Allen, R. N. who had been exploring the Niger, arrived at Plymouth on Tuesday last, in the *Talbot*, 28. Lieut. Allen has completed his surveys, and immediately set off for London, with the interesting results of his expedition.

ENGLISH ABSENTEEISM.—"It is most lamentable," says the January number of the *London Quarterly*, "to observe the extent to which aristocratic emigration is at this particular time going on. We happen to know that the letters of credit granted to English continental travellers by the two principal banking houses in the West End of London, exceed this year, both in number and value, by more than a half those of any preceding year."

MONK LEWIS.—Not many readers, probably, of the present generation, know aught of the work whence *Lewis* received this title, and it is quite as well they never should. In a recent number, however, of the *London Quarterly Review*, we find a notice of a posthumous work of his, which exhibits both his character and understanding in a more favorable light than his early living publications. It is called "The Journal of a West India Proprietor," and is, in fact, his own journal, he having inherited large estates in the island of Jamaica, on returning from a second voyage to which, in 1818, he died at sea: a sacrifice, according to report, "to a very strange whim, that of persisting, in spite of all advice, to take emetics as a preventive against sea-sickness." The descriptive talent, the playful humor, and the humane and considerate temper in the treatment of his numerous slaves, exhibited in this Journal, together with numerous poetical pieces interspersed through its pages render it quite agreeable reading. We subjoin a short poem written at sea:

THE HELMSMAN.

'Hark! the bell! it sounds midnight!—all hail, thou new heaven!
How soft sleep the stars on their bosom of night!
While o'er the full moon, as they gently are driven,
Slowly floating the clouds bathe their fleeces in light.
The warm feeble breeze scarcely ripples the ocean,
And all seems as hush'd, all so happy to feel!
So smooth glides the bark, I perceive not her motion,
While low sings the sailor who watches the wheel.
'Tis so sad—'tis so sweet—and some tones come so swelling,
So right from the heart, and so pure to the ear.—
That sure at this moment his thoughts must be dwelling
On one who is absent, most kind and most dear.
Oh may she, who now dictates that ballad so tender,
Diffuse o'er your days the heart's solace and ease,
As you lovely moon, with a gleam of mild splendor,
Pure, tranquil, and bright, over-silver the seas!

A BRITISH AMBASSADOR.—From an account of "The Transactions of the British Mission at the Court of Persia in 1810-11, by H. Jones Brydges, the Ambassador, the following scene is copied:

In the preliminary treaty, there was one article left indefinite; but it was well understood between the plenipotentiaries in what manner, on the ratification of the treaty, that article was to be made definite by his majesty's government; and I had, throughout the whole of the negotiation, insisted on maintaining as a *sine qua non*, that this article should, in this respect, be left to the decision of his majesty's government. I had delivered to Meerza Sheffee, as the principal Persian plenipotentiary, the treaty signed by me, and he had in his hand the counterpart signed by the Persian ministers, apparently ready to deliver me. But all at once he laid it down on the carpet, and took it in his head to begin talking on the indefinite article, and insisted on its being made definite, before the treaty was sent to England for the ratification of his majesty's government. A little debate ensued, which of course ought not to have been the case, and which, as may be easily imagined, I was anxious to put an end to; when most unexpectedly, and perhaps fortunately for me, he as far forgot himself as to say—'Do you come here to cheat us?' The terms of this speech are in Persian so dreadfully gross, that they cannot be rendered into English by any decent words; on hearing which, I snatched up the counterpart treaty lying on the carpet, gave it to Mr. Morier, rose up and addressed the old minister:—'You stupid old blockhead, do you dare to use these words to me, who in this room represent the King of England?—If it were not for the respect I bear your master, the King of Persia, I would knock your brains out, if you have any, against the wall!' and, suiting the action to the word, I pushed him with a slight degree of violence against the wall which was behind him, kicked over the candles on the floor, left the room in darkness, and rode home, without any one of the Persians daring to impede my passage. The instant I arrived at my lodgings, I retired to my private apartments, which were in a small court separate from those of the gentlemen, and caused the outer-door to be shut. I was scarcely seated, before several persons came thundering at that door; I went to it, and asked them who they were, and what they wanted; they answered they came from Meerza Sheffee and the Ameen-ed-dowlah, that they had brought with them the treaty, with my signature, and were ordered to demand from me the counterpart, signed by these ministers. To this I answered, 'I cannot be disturbed now; go and tell your masters this is a matter which will keep till morning very well, and by that time, perhaps, Meerza Sheffee will recollect himself.' They became extremely loud and importunate, and said, 'it was as much as their heads were worth to return without the treaty.' I said, 'I will tell you what it is, my worthy friends; by G—d, if you stay here making a noise and riot, I shall soon make that as much as your heads are worth.' After a little pause, I heard them, on going away, very distinctly say, 'by G—d, this Fringe is either drunk or mad.' I requested the next morning to be admitted to a private audience of the King of Persia; my request was granted, and as soon as I had made my obeisance, his majesty said, 'so Elchee! I suppose you are come to make an apology for your unheard-of behavior last night to my vizier.' 'I am come,' replied I, 'as my duty requires me to do, to explain my conduct to your majesty; and that done, if you judge I have acted wrong, I am willing, as a private person, to submit to any censure your majesty may esteem proper; but I must declare to your majesty, the King of England does not allow his representative to apologize without his royal and special orders; and I need not tell your majesty, that in this room, and in your presence, I am representing that great and powerful sovereign.' I then repeated to the King of Persia the words the minister had made use of to me; and added, 'Suppose I had so far forgotten myself as to have made use of such words to any person deputed to the high honor of representing your majesty, would you have been well pleased if that person had been base enough not to have noticed them in the way they deserved?' The King of Persia laughed, and said, '*Hak daree*, you have right on your side; the old man should have recollected what Meerza Bozurg told him about Europeans, and especially about yourself; that in his conversation with them he must take care not to use words to them which he frequently uses to persons of great rank here; but I must call my old minister in, and you must make it up.' Meerza Sheffee soon

appeared, and the king said, 'Meerza Sheffee! *saaf-ud-dowlah*, (i. e. vizier of the empire,) here is the English ambassador, come to say he is sorry for what has happened.' 'Stop there, please your majesty; I come to say I am sorry for the occasion of it; but further I will not say.' 'Well, well,' said the king; 'it is for the advantage of my service that you two should be friends; and now, ambassador, I tell you I am well pleased with the treaty as it stands, since I am sure, from what I see of you, that whatever you have held out to us will be performed by your government.' I shortly afterwards left the palace, and in the evening I made a point of appearing at Meerza Sheffee's *meglia*, or levee; and from his politeness and attention, it appeared he thought no more of what had happened."

Only conceive, says the *London Literary Gazette*, such a scene in London! Talleyrand kicking Lord Palmerston, and calling him a stupid old blockhead, &c.; or Prince Esterhazy bestowing a caning on Lord Althorp or Lord Grey, and swearing, he'd be d—d if they kicked up a row, but he would wallopp them! Different countries require different manners, perhaps? and different ministers, different treatment? Our Meerzas and Ameen-ed-dow-dahs might not like it.

From the *Bubbles of Brunner*—a fantastic title to a very agreeable and sprightly account of the mineral springs of the Duchy of Nassau—we make some extracts to-day, that will be relished, we hope, by our readers.

ENGLISH TRAVELLERS ON THE CONTINENT, AS DESCRIBED BY AN ENGLISHMAN.

'Our *compagnons de voyage* [the party were ascending the Rhine in a steamboat] were tri-colored, Dutch, German, and French, and, excepting always ourselves, there was nothing English—nothing, at least, but a board, which sufficiently explained the hungry insatiable inquisitiveness of our travelers.—The black thing hung near the tiller, and upon it there was painted in white letters the following sentence, which I copied literatim—

"*Enfering any conversation with the Steersman and Pilot is desired to be forbore.*"

'As the vessel proceeded towards Coblenz, it continually paused in its fairy course, apparently to barter and traffic in the prisoners it contained—sometimes, stopping off one little village, it exchanged an infirm old man for two country girls, and then, as if laughing at its bargain, gaily proceeding, it paused before another picturesque hamlet, to give three Prussian soldiers of the 36th regiment for a husband, a mother, and a child—once it delivered an old woman and got nothing, then luckily it received two carriages for a horse, and next it stopt a second to take up a tall thin man, who turned out to be an itinerant poet, and who, as soon as he had collected from every passenger a small contribution for having recited two or three little pieces, was dropt at the next village, ready to board the steam-vessel coming down from Mayence.

'In one of these cartels, or exchanges of prisoners, we received on board Sir — and Lady —, a young fashionable English couple, who, having had occasion a fortnight ago, to go together to St. George's church, had (like dogs suffering from hydrophobia, or tin canisters) been running straight for wards almost ever since. As hard as they could drive, they had posted to Dover, hurried across to Calais, thence to Brussels, snapt a glance at the ripe corn waving on the field of Waterloo, stared at the relics of that great saint, old Charlemagne, on the high altar of Aix-la-Chapelle, and at last sought for rest and conjugal refuge at Cologne; but the celebrated water of that town having in its manufacture evidently abstracted all perfume from the atmosphere, they could not endure the dirt and smell of the place, and therefore had proceeded by land to Coblenz; but as they were changing horses at a small village, seeing our steam-boat cantering through the glassy waves, they ordered a party of peasants to draw their carriage to the banks of the river, and as soon as the vessel came smoking alongside, their rosy, fresh-colored French maid, their chocolate-colored chariot, and their brown ill-looking Italian courier, were all on board.

'As soon as this young London couple lightly stepped on deck, we saw at one glance that, without at all priding themselves on their abilities, they fancied, and justly fancied, that they belonged to that class of society which in England exclusively, and so modestly calls itself—good. That it was not healthy society, that its victims were exposed to

late hours, crowded rooms, and impure air, was evident enough from the contrast which existed between their complexions and that of their healthy country attendant; however, they seemed not only to be perfectly satisfied with themselves and the clique which they had left behind them, but to have a distaste for every thing else which they saw.—Towards some German ladies, who had slightly bowed to them, they looked with a vacant haughty stare, as if they conceived there must be some mistake, and as if it at all events would be necessary to keep such people off.

Yet, after all, there was no great harm in these two young people. Their heads were lanterns illuminated with no more brains than barely sufficient to light them on their way, and so, like the babes in the wood, they sat together hand in hand, regardless of everything in creation but themselves.

For running their carriage down to the shore, the brown confidential courier, whose maxim was of course to pay little and charge much, offered the gang of peasants some kreutzers, which amounted in English currency to about sixpence. This they refused, and the captain of the party, while arguing with the flint-skinning courier, was actually carried off by our steamboat, which, like time and tide, waited for no man. The poor fellow, finding that the Italian was immovable, came aft to the English couple, who were still leaning towards each other like the Siamese twins. He pleaded his case, and in a manly tone of voice prayed for redress. The dandy listened, looked at his boots which were evidently pinching him,—passed four white fingers through the long curls of his jet-black hair—showed the point of a tongue gently playing with a front tooth—and when the whole story was completely at an end, without moving a muscle in his countenance, in a sickly tone of voice, he pronounced his verdict as follows—"Alley!"

The creditor tried again, but the debtor sat inanimate as a corpse. However, all this time the steamboat dragging the poor peasant out of his way, he protested in a few angry exclamations against the injustice with which he had been treated, (a sentiment we were very sorry to hear more than once mildly whispered by many a quiet-looking German;) and, descending the vessel's side into a small boat which had just brought us a new captive, he landed at a village from which he had about eight miles to walk to join his comrades.

It is with no satirical feeling that I have related this little occurrence. To hurt the feelings of "gay beings born to flutter but a day"—to break such a pair of young, flimsy butterflies upon the wheel—affords me neither amusement nor delight; but the every-day occurrence of English travellers committing our well-earned national character for justice and liberality to the base, slave-driving hand of a courier, as well as the bad taste of acting the part of London dandy on the great theatre of Europe, ought to be checked.—*Bubbles*, pp. 26, 29.

The following paragraph, taken from a Frankfort paper of April 13th, 1834, is going the rounds under the head of "German opinions of American character:"

"We have recent news from our emigrants to America. All of them indicate that the hopes that were entertained have proved fallacious; though none of the emigrants will plainly confess that he has entirely thrown away a happier way of life. Proud and covetous merchants and speculators inhabit the towns on the coast of America and the banks of the rivers; they are of English origin, and look down with an eye of contempt on the good-natured German who seeks only an ideal liberty in a foreign country, and finds a miserable existence; who is plundered if he brings money with him, and repulsed if he appears as a stranger seeking assistance and friendship. But in the interior of the country, none can subsist but the man who has a frame hardened against every kind of privation, who can sleep on straw and dry leaves as well as on a soft feather bed, who is willing to exchange the elastic sofa for a hard seat on a block of wood; in a word, who has courage to fall back from a life of luxury to the rude state of nature."

This certainly betrays great ignorance of the condition of our country generally, but hardly more than may be found in some sections of the Union, in relation to others a few hundred miles off. The Kentuckian at home will ask the New Yorker whether he has any woods or hills in his State; while the New Yorker watches for some outbreaking of the Colonel Wildfire in a man from whom, whatever

may have been his own advantages, he may yet take lessons in politeness. The East Tennessean will speak of Boston and London as if side by side with each other, and equally far from his mountain home. The Western Virginian will talk about the "Yankee pedlers" from *Pennsylvania*, and the Bostonian and Pennsylvanian will know about as much of the Hoosiers of Indiana, as does a West Georgian of fresh codfish and anthracite coal. Step but once from the great highways of travel through which our commercial population are thronging from one end of the Union to the other at all seasons, and it appears that among residents of the middle classes, it is on the frontiers alone where the enterprising and adventurous, from all parts of the Union, from each quarter of the world, are collected, that the geographical features of our broad country, and the mode of living in different sections of it, are clearly understood. Canals and railroads have a great deal to do in making the people of different parts of the Union acquainted with each other, and dispelling the almost incredible ignorance which reigns in some districts, of the pursuits and habits of others, by no means remote. In the meantime, however, much might be effected by a portion of the numerous educated young men, who now, upon leaving college, transfer themselves at once to Europe, after viewing but very little of their own country. It is such as these—men of leisure and accomplishment, who could deviate from the usual routes taken by hurried business men and mere collecting agents, and stir up the good people in old stagnated neighborhoods to something like an aspiration for intelligence and improvement. They too, in their turn, would learn, while catching the tone of a hundred secluded little communities in various parts of the country, what a small portion of public opinion comparatively is manufactured in that well-known circle, which, with them, comprehends "the world."

In a condition of society like ours, where ninety-nine men out of a hundred are bound down to regular pursuits by the trammels of business, the roving freedom of a happy, careless few, assimilates them in some points to those classes of water-fowl, which, though they neither build nests on the strange shores to which they wander, nor enrich the woods with music at home, still bear on their journeyings, and scatter for casual production, the seeds of a thousand fruits and flowers.

SUMMARY.

[From the *Baltimore Patriot* of Tuesday.]

We learn that Col. EDWARD LLOYD, formerly Governor of Maryland, and more recently a member of the U. S. Senate, died yesterday at Annapolis, aged 56.

The deceased was a favorite son of his native state—was elected when very young to the House of Delegates, and successively to all the highest stations under government. He bore a conspicuous part on all political occasions of extraordinary interest—and was as remarkable for the munificence of his private hospitality as for his public spirit.—There are few whose death will be heard with more regret by the public; none could be more deeply lamented by those who knew his fine social qualities and peculiar accomplishments.

SUGAR REFINERY.—The New Orleans (La.) Advertiser of the 27th May, says—"There are now loading at the Sugar Refinery of Messrs. Forestall & Co. four vessels for the Mediterranean. The Refinery is situated about two miles below the city. One hundred and thirty men are employed in it, and the quantity of sugar refined amounts annually to about 12,000,000 of pounds. The whole process is done by steam, and it is said to be, without exception, the most extensive and complete establishment of the kind in the whole world."

A Sloop Burnt!—The sloop *Levant*, owned by Messrs. Fitch & Losee, of this city, loaded with Lumber, took fire last night, while lying on the Over-slaugh, and burnt to the waters edge. We understand there was no insurance, and that the loss was about \$3000.

EXPLOSION.—On the morning of the 6th instant, soon after commencing their work, Edward Oates and John Cooke were together unfortunately killed, by an explosion of one of the buildings attached to the Orange Powder Mills, near Newburgh.

The only operation required to be performed in that building, is simply passing the grains through parchment sieves, and a silk reel, by hand. The cause of the misfortune is, therefore, mysterious.

The New Orleans Bulletin of the 24th ult. says "The weather for several days past, has been exceedingly cold and disagreeable. There has been more or less Cholera in the city all the winter and spring; but latterly cases have increased, and there is reason to fear that it may prevail epidemically again as it did last June."

Wheat Crops.—The prospects for the wheat crops in this county have greatly improved during the last three weeks. The wheat fields generally have an uncommonly fine appearance, and promise the farmers an abundant harvest. The crop of grass also promises to be very abundant.—[*Poughkeepsie Eagle*.]

A passenger in the ship *Gulnare*, from Havre, at Baltimore, states that when he sailed, (April 30th) it was currently reported that Louis Philippe had pledged his private fortune to pay the American Claims, should the Chamber of Deputies again refuse. This says the *Gazette*, must be an error, as our advices by the *Sylvanus Jenkins* are to the 7th May from Paris, and no mention is made of the fact.

The State Loan.—The State Loan of \$600,000 was on Thursday last taken by E. Chancery, Esq. of Philadelphia, at a premium of two dollars and fifty-eight cents, i. e. he agreeing to pay one hundred and two dollars and fifty cents in money, for every hundred dollars of stock. The loan of \$1,665,400 remains in the market until Thursday, the 10th July.—[*Philadelphia Nat. Gaz.*]

The venerable Bishop CHASE, says the *Detroit Journal*, arrived in our city some days since; he preached on Sunday last at the Episcopal Church. This estimable man resides in the St. Joseph county, he appears to enjoy excellent health, and amid the cares and employments of a new farm in a new country, he finds leisure for intellectual labors. The occasion of his visit to our city is in part to superintend the publication of a pamphlet he has prepared for the Press.

[From the *Commercial Advertiser*.]

ECONOMICAL PENMAN.—A treatise and samples have been shewn us, entitled "The economical and expeditious Penman, or an easy method by which a free, legible and elegant style of writing may be readily acquired by a system altogether novel, and hitherto unattempted." It is for sale by the author, Mr. William Jones, late of London, at his Writing Academy, 202 Broadway. We have witnessed the best test of improvement in writing—the proficiency attained by one of his pupils, and the book referred to is the adaptation of his system to the eye. Its object is, without the aid of a master to enable the purchaser to acquire a style of writing, suited alike to the men of business and the general correspondent. Editors have special reasons for wishing that the art of legible penmanship may be more universally diffused.

A greedy Sheep.—On Thursday last, on a farm in the Aird, a ewe ate the tails of her two lambs completely to the stump! This unnatural preference of mutton to hay and turnips, was witnessed by the farmer and his servants, who interfered to save the lambs from the woolly cannibal, but without effect, as she returned to the charge when unobserved, and accomplished her purpose.—[*Inverness Courier*.]

A Persian Fable.—I was walking in a beautiful meadow with a friend, where I saw a man, who I knew to be a villain, sleeping in great comfort and tranquillity. "Good heavens," exclaimed I, "the evils which this man has committed do not break his repose!" "God," said my friend, "suffers villains to sleep, that honest men may live undisturbed."

From Rio Grande.—By the brig *John Alexander*, Capt. Berry, arrived yesterday from the above port, we learn that Capt. Baker of the brig *Ganges*, from Boston, having arrived at Rio in March, when the authorities suspecting that he had false coin on board seized the brig and took out all her cargo. Finding however, that it was all entered on the manifest, but among other things there were entered 25 boxes of soap, and as it was not entered as *shaving* soap, they fined the Captain 300 miltreas, and confined him one week in prison.—[*Gaz.*]

Our readers will, we think, be interested by the spirited account in this day's paper of the reception, by the Pawnees, of the United States Commissioner, Mr. Ellsworth, on a mission to effect a treaty with them. We are obliged by the communication of a narrative so graphic and well sustained.

Reception of the United States Commissioner by the Pawnee Indians, October 2, 1833.

The night previous to our arrival at the Pawnee Village was spent by us upon the borders of the Platte River, at about nine miles distance from the town. During the evening, several half breeds who had been sent out by the Commissioner, to gain information of the probable reception which awaited us, came dropping in, and all bearing with them promises of a friendly welcome from the different Pawnee Chiefs. At sunrise the next morning the tents were struck and placed in the heavy baggage wagons; and a more than usual bustle and note of preparation was heard in the camp, (if two tents accommodated ten persons deserve that name.) The soldiers were seated around upon the grass, examining and preparing their arms for service, in case such service might be required; and about twenty Otoe Indians, who had accompanied us across the prairie, a hundred miles from their village, either from motives of curiosity, or from sheer listlessness, caring little where or how they spent their time, were now busily engaged in ornamenting themselves for the meeting. Some had spread their blankets out upon the prairie, and were anxiously employed in tracing out various figures in vermilion upon their woolly surfaces: some were eagerly bending over the small pools of still water, which were left in the dry bed of the River, painting their faces with the vermilion which they had obtained from the whites, and manifesting all the interest and anxiety in the choice of the ornaments, which in civilized life might be expected from a young girl in preparing for her first ball. Paint was placed on and rubbed off; faces were striped first in one direction, then in another; and the advice of those who were sitting around was asked and given with all the gravity befitting so important an operation. In the meantime, two or three who had finished their toilets, seated themselves off at a short distance to serve as models for the rest; and several who had acquired some reputation for their skill in this art, were busily engaged in painting up the less gifted of their companions. Whilst this was going on in one quarter, in another, five or six Indians, who either had no paint, or cared not about the opinion of those whom they intended to visit, had stretched themselves at full length in the grass, and were keeping up an incessant drumming upon their breasts with their two fists in exact time to a chaunt, which they were letting out at the top of their lungs, and which they always wound up with a loud yell, by way of chorus.

But there must be an end of all things, and in due time there was an end of the preparations. The tents were packed; the Indians were painted and striped to resemble any thing but men; the soldiers had examined their arms; the horses were saddled; the oxen were secured before the heavy baggage wagons, and the party commenced slowly moving onward towards the village.

It was a fine sunny morning in October, the clumps of trees which clustered on the low banks of the river, the numberless small islands which dotted the surface of its broad shallow water, were alive with woodpeckers of every size and hue, who were darting among the tall dead trees which overhung the dark and muddy stream, and making their trunks resound with the incessant hammering of their small but powerful beaks; large flocks of gaily plumed parrots whirled screaming past us with a surprising velocity, darting like lightning among the branches of the trees which skirted the banks of the river.

At ten o'clock the party had travelled several miles across the prairie, and our vicinity to the village was becoming more perceptible. Mounted Indians, who had been sent out to watch for our approach, were seen here and there flying across the hills in the direction of the village, to give notice of the arrival to their Chiefs. At a distance we could perceive several bands of Indians in pursuit of large droves of their wild and fiery horses, which they were urging forward at a headlong speed in the direction of the town, and in another quarter, on the tops of a ridge of small hills, groups of five or six were standing, intently watching the motions of the party, which, from the jaded state of the oxen, were necessarily slow. The soldiers who had been lazily lounging along across the prairie, were now called in and formed in a compact body around the baggage

wagons in case of danger; and an hour more brought us in sight of the village.

Upon our nearer approach, we could perceive that the hills which surrounded the place were black with the living mass of mounted warriors which swarmed upon their tops to the number of several thousands, and who now stood silently watching the approach of the Mission. At length a single horseman detached himself from the mass, and came galloping down the hill and over the prairie to meet us. As he approached nearer, the wild free air of the rider, and the ease with which he governed his gigantic black horse, could not but raise the thought that, if the rest of these warriors were of the same mould, any resistance of our band, however desperate, would have availed but little against the attack of these proud rulers of the prairie.

Upon reaching the party, he sprang from his horse, and after shaking hands with Mr. E—, he gave directions (through the Interpreter), that the band should be drawn up in as small a compass as possible, to avoid all contact with his warriors, and after spending some time in completing his arrangements, he galloped back and gave the signal to the rest.

In an instant, the hills were deserted, and the whole mass of warriors were rushing towards us across the broad bosom of the prairie. It was a moment of intense and fearful expectation. On, on, they came, each mad horse with erect mane and blazing eye, urged forward by the bloody spur of an Indian master, and that master a being who acknowledged no superior but the Great Spirit, and no ruler save his own wild will.

They had reached within two hundred yards of the party, but still the speed of their horses was unchecked; the powerful tramp of their hoofs rung like thunder upon the sod of the prairie, and the wild forms of their riders were still urging them onward towards us, when at a signal from the Chief, the band separated to the right and left, and commenced circling around the party, in one dark, dense flood of human beings, while the whoops and yells which rung shrilly around us, and the furious and menacing manner in which they brandished their bows and tomahawks, would have led a person unacquainted with their habits to have looked upon this reception as any thing but friendly; and there is something in the fierce, shrill scream of a band of Indian warriors, which rings through the brain, and sends the blood curdling back to the heart.

Their ornaments, though wild, were many of them beautiful: the closely shaven heads of some were adorned with the plumage of different birds; others wore an ornament of deer's hair, bound up in a form resembling the cone of an ancient helmet, and a plume of the bald eagle floated from the long scalp locks of the principal warriors.

Some few wore necklaces of the claws of the grizzly bear, which hung down upon their breasts, and the bodies of some were covered with buffalo robes, or the skin of the white wolf; but the most of them wore no covering, save a thick coat of paint, which they had profusely smeared over their bodies and arms, and which many had even bestowed upon the heads and limbs of their horses. After rushing around us for some time, the chief waved his hand, and the turmoil ceased: the warriors sprang from their horses, and seating themselves around in a large circle, awaited the arrival of the Chief of the Grand Pawnees, who in a few moments advanced to meet Mr. E—, accompanied by the different chiefs of Tappaye Pawnee, Pawnee Republican, and Pawnee Loup villages.

He was a tall powerful Indian; a fillet made from the skin of the grizzly bear, and ornamented with feathers, was bound around his head: over his shoulders was thrown a large mantle, made from the skin of the white wolf, also adorned with feathers: his legs were cased in black leggings of dressed buffalo hide, worked with beads, and fringed with long locks of human hair, which he had taken from the scalps of those who had fallen beneath his arms in his various war expeditions, and which now hung down over his knees, and trailed upon the ground as he strode up to the party.

He first advanced and welcomed Mr. E. and afterwards the rest. The chiefs of the three different villages were then introduced, and repeated the words of welcome uttered by the first.

This ceremony was scarcely finished, when a movement was observed among the crowd, and in a moment after, a powerful roan horse, mounted by an armed Indian, bounded forward to the middle of the circle, where the rider sprang from his back.—He was a stranger among the tribe, and spoke not their language: a Cuyway Indian from the borders of Mexico, a member of those wild tribes, the Arabs

of the West, who are continually on the wing, sweeping those immense plains, and carrying destruction to all who are not strong enough to resist them, having no home but the prairie, no trade but war, no property save the horse that bears them, the arms which they wield, and the plunder which they strip from their victims. After pausing and looking around him for a moment, with a glance that seemed to challenge any opposition from the assembled warriors, he walked up to Mr. E. He was a slight and beautifully formed Indian, but there was a fire in his eye, a swell of the nostril, and a proud curve of the lip, which showed a spirit that brooked no opposition, shunned no danger, and which could only be quenched by the chill of the grave.*

His long black hair, which trailed behind him upon the ground, was platted together, and ornamented with about twenty plates of massive silver; a band of silver was fastened around his throat, and several large medals of the same metal hung down upon his breast; upon his arms were several bands of silver, and rings of the same upon his fingers; his leggings, though more finely wrought, like those of the other chiefs, were fringed with scalps; and a scalp, consisting of the entire upper part of a human head, hung from the bit of his fiery horse.

Upon coming up he offered his hand to Mr. E—, and in succession to the rest; and after pausing and gazing upon us for a short time, with some curiosity, he sprang upon his horse, and riding through the circle, was lost behind the more distant crowd of warriors.

After the introduction of the various Chiefs had been performed, from among the mass of grim beings which hemmed us in, and who were now seated upon the ground like so many dark forms of statuary, without voice and without motion, several arose, and coming towards Mr. E—, and Major D—, the United States Agent for the Pawnee Indians, extended the stem of their pipes to the lips of each, and instantly retiring, resumed their station in the crowd. By this action, we afterwards learned, that each had pledged himself to present a horse to the person to whom he had extended his pipe. In the meanwhile, two old men, who had assembled with the rest, and had no horses to lose by the free indulgence of liberal feelings, rose up, and by loud and vehement harangues endeavored to excite the liberality of the rest by boasting of the number they would bestow, if they but had them, and recounting the acts of generosity which they had performed in their youth, and which, as that youth ran far back beyond the memory of the eldest inhabitant, there was but little possibility of contradicting.

After they had finished, the Wild Horse. (I do not recollect his Indian name) the principal warrior of the nation, stood up and harangued the assembled multitude, launching out in a long panegyric upon the whites, which was delivered with a warmth of expression no doubt greatly increased by the sight of the wagons loaded with presents, which accompanied the party, and which are always necessary to the successful accomplishment of an Indian treaty.

This warrior was one of the most singular, as well as ferocious of the tribe; and many were the tales of his war expeditions, afterwards related to us by the trappers, when we assembled around our night fires after a long day's travel across the prairies. His height could have been but little short of seven feet and every limb of his frame was proportioned in size and strength to his giant height. Unlike the rest of his tribe, his hair remained unshaven, and hung in long tangled locks which reached nearly to his waist, and were profusely smeared with red ochre. His low retreating forehead was almost buried in wrinkles; and deep set in his head were two eyes which glowed like living coals. His nose was large and prominent, and the size of an enormous mouth was not at all diminished by two streaks of vermilion which he had drawn from each corner to his ears. He wore neither covering nor ornament, unless the profusion of black clay and red ochre which covered his body, deserved that name; but he stood out in his naked proportions, a giant among those who sur-

* We afterwards learned that this Indian had become attached to a young girl of his own tribe, who was the wife of another, but her husband having started upon some expedition she had taken advantage of his absence to leave her nation with her lover, and together they had fled to the Pawnee village which they had reached a week previous to our arrival. We were afterwards so fortunate as to see the girl, and it was admitted by all that she was one of the most elegant Indian women they had ever beheld, and that her beauty went far in extenuation of the act of her Indian lover.

rounded him, whilst the wild energy of his gesticulation as he delivered his harangue, served to show the prodigious strength which lay hidden in that form, and which only required an occasion to bring it into action. From his youth upward, he had been the leading warrior of the nation, and his deeds had spread a terror of his name through all the hostile tribes. Though no chief, his influence with the nation was equal to theirs, rendering him as much an object of jealousy to them as of dread to their enemies.

When he had finished his address, the Chief arose and spoke to his men; after which, the circle opened and forming into two lines, one on each side, prepared to escort the party into their village.

MICHIGAN.

This portion of our country is very justly attracting a very large share of public attention. To the farmer it is interesting on account of its luxuriant soil and healthful climate; to the merchant for its immense facilities for trade, being intersected in all directions by fine rivers, penetrated by deep bays, and surrounded by magnificent lakes; to the statesman and philanthropist, it is interesting, as destined to be the speedy home of hundreds of thousands of enterprising emigrants who will exercise an important influence in the affairs of the nation, and whose heterogeneous character will afford a curious subject of observation. The character of the interior of Michigan is much misunderstood. Instead of being a cold, wet region, there is no country more dry, rolling and pleasant, after you get out 15 or 20 miles from the Lakes and their connecting rivers. The innumerable little lakes interspersed through the country, serve to drain it perfectly; and one can scarce imagine a more pleasing sight than the gently rolling hills, covered with the orchard-like woods, which constitute the *Out Openings*, surrounding one of those deep, clear and crystal-like pools, abounding in fish.

It is a matter of surprise that this region is not more visited by those who travel so much every summer for health or amusement. Travelling has been rendered so convenient that it has lost all its terrors even to the most delicate. Starting from New York, for instance, in a few days we may find ourselves, after a delightful tour up the Hudson, and through the beautiful villages and cultivated fields of the interior of New York, at the Falls of Niagara, where no man can live without becoming a poet, such is the inspiring influence of the scenery. Near this too are the scenes of several of the most interesting military operations of the last war. Embarking at Buffalo, we find ourselves on board a steam ship far superior in safety and comfort to any thing of the kind to be found on the North River; and in 30 to 36 hours we find ourselves at Detroit, where we may see a most thriving city of five or six thousand inhabitants, and where we will meet an active and intelligent people, than whom none in the Union are more hospitable and liberal. Here, too, if we are so fortunate as to have a good reference, we will find a comfortable home at the house of Mrs. Snelling, widow of the late gallant Col. Snelling of the army. This lady occupies the former residence of old Gov. Hull, the only house in the city well adapted for a boarding house, where she combines the elegant taste of our eastern cities with the ease, frankness, and conviviality of the West.

After enjoying the hospitality of Detroit, and viewing the interesting region around, some of whose scenes have become truly classic, we may step on board the splendid steamboat Michigan, and wend our way to Macinac, Saut de Ste. Marie, Green Bay and Chicago; and return in the same boat, or cross the Peninsula by land, or travel eighty miles across the prairie to the falls of the Illinois, where we can take a steamboat twice a week to St. Louis, and return by way of the Ohio. Either of these routes may be travelled with much ease, little expense, and great pleasure. The whole tour from New York to Chicago and back would not occupy more than four weeks; and how much better it would be to make this tour than to idle four weeks away at Saratoga, I leave those interested to judge. The fine new steamboat Michigan will leave Buffalo on the 10th July and 1st August on this tour, and goes expressly to accommodate passengers wishing to see the regions of the Upper Lakes.

[From the Journal of Commerce of yesterday.]

DEPARTURE OF THE MORRISON.—The ship Morrison, Captain Lavender, left us yesterday, bound to Canton. She has on board as passenger, the Rev. Peter Parker, late of Framingham, Mass., who goes out as missionary to China. This gentleman, during the two or three weeks he has been in this city, has

gained the affectionate confidence of all who have had intercourse with him. Sunday before last, we had the pleasure of hearing him preach, and again last Sunday evening, of listening to a Farewell Address which he delivered in the Bleecker st. Church. On the latter occasion, notwithstanding the rain, the house was crowded to excess. Every aisle and corner where a person could find footing, even to the pulpit stairs, was occupied, and many went away, from the impossibility of gaining admittance. A delightful impression was left upon the minds of the audience by the various exercises of the evening, among which was the communication of Instructions by the Rev. Dr. Wiener, as Secretary of the American Board of Missions, and an address by the Rev. Dr. Spring.

Yesterday morning, at six o'clock, a meeting was held at the house of Abijah Fisher, Bleecker street, for the purpose of commending both the Missionary and the Missionary cause to the care of Omnipotence. Some of our friends who were present, tell us that it was a scene of rare and peculiar interest. After singing the first two verses of the 496th of the Village Hymns, "Go, messenger of love," &c., prayer was offered by the Rev. Elihu W. Baldwin. Then were sung the 1st and last two verses of Heber's missionary hymn,

"From Greenland's icy mountains."

Next a prayer was offered by the Rev. O. Eastman—after which was read the 91st Psalm—"He that dwelleth in the secret place of the Most High," &c. Prayer by the Rev. Erskine Mason. Address, by the Rev. Dr. Wiener. Parting address and prayer, by the Rev. Peter Parker. Next were read the last three verses of the Gospel of Matthew, containing the commission of our Saviour, "Go ye therefore and teach all nations." Mr. Parker then read the following hymn, and added, addressing himself to the little assembly, "I want you to sing it, for I cannot."

THE MISSIONARY'S FAREWELL.

Kindred, and friends, and native land,
How shall we say farewell?
How, when our swelling sails expand,
How will our bosoms swell?
Yes, nature, all thy soft delights
And tender ties we know:
But love, more strong than death, unites
To Him that bids us go.
Thus, when our every passion mov'd,
The gushing tear drop starts;
The cause of Jesus more lov'd,
Shall glow within our hearts.
The sighs we breathe for precious souls,
Where He is yet unknown,
Might wait us to the distant poles,
Or to the burning zone.
With the warm wish our bosoms swell,
Our glowing powers expand;
Farewell,—then we can say,—Farewell,
Our friends, our native land!

The exercises were concluded with prayer, and the benediction by Rev. Dr. Wiener.

At 9 o'clock, or soon after, Mr. Parker, accompanied by a number of missionary friends, went on board the steamboat Rufus King, and proceeded to the ship, then lying off Bedlow's Island. While towing the ship to sea, religious services were held on board the steamboat.

Mr. Parker is both a clergyman and a physician. His design is, we understand, to associate himself in labors and travels with the celebrated missionary Gutzlaff. He knows full well that the service he has undertaken is full of peril; but he has counted the cost. He leaves his home and country, (never expecting to see either again,) not only with cheerfulness, but with a glow of pious feeling which makes him a truly happy man. Possibly some of our readers may deem our language strong; but we know that those who have been present during the scenes to which we have alluded, will think it tame and cold, in comparison with the reality.

Mr. Parker is accompanied by a Chinese youth, 19 years of age, who, by some means or other, found his way to this country, and has acquired considerable knowledge of our language. Mr. P. hopes to derive much assistance from him, during the voyage, in learning the Chinese. "I no like my country's religion," said the young man, on being conversed with by Mr. Parker: "I like your religion better." "Then what do you go back to China for?" asked Mr. Parker. "To get more money," was the reply. We fain would hope, that by his intercourse with that excellent man, he may gain, with the blessing of God, what is more valuable than money, or worlds.

The owners of the Morrison, Messrs. Talbot, Olyphant & Co. have been extremely kind to Mr. Parker, and among other tokens of their interest in him and the cause he goes to plead, they give him his passage gratis. Mr. Olyphant has himself gone passenger in the Morrison, together with his eldest son

and a daughter. He expects to be absent about two years.

The Morrison got to sea about half past 12 o'clock on Wednesday, and was well off, probably, before the blow during the night.

[From the London Literary Gazette, of April 19.]

"THE VOICE OF THE WAVES."

(Written near the Scene of a recent Shipwreck.)

"Answer, ye chiming waves,
That now in sunshine sweep;
Speak to me from thy hidden caves,
Voice of the solemn deep!
Hath man's lone spirit here
With storms in battle striven?
Where all is now so calmly clear,
Hath anguish cried to Heaven?
Then the sea's voice arose,
Like an earthquake's under-tone—
Mortal, the strife of human woes
Where hath not nature known?
Here to the quivering mast
Despair hath wildly clung;
The shriek upon the wind hath past,
The midnight sky hath rung.
And the youthful and the brave
With their beauty and renown,
To the hollow chambers of the wave
In darkness have gone down.
They are vanished from their place
Let their homes and hearths make moan!
But the rolling waters keep no trace
Of pang or conflict gone.
Alas! thou haughty deep!
The strong, the sounding far!
My heart before thee dies—I weep
To think on what we are!
To think that so we pass,
High hope, and thought, and mind,
E'en as the breath stain from the glass,
Leaving no sigh behind!
Saw'st thou nought else, thou main,
Thou and the midnight sky—
Nought, save the struggle, brief and vain,
The parting agony?
And the sea's voice replied—
'Here nobler things have been!
Power with the valiant when they died,
To sanctify the scene:
Courage, in fragile form,
Faith, trusting to the last,
Prayer, breathing heavenwards through the storm,—
But all alike have passed.
Sound on, thou haughty sea!
These have not passed in vain;
My soul awakes, my hope springs free
On victor wings again.
Thou, from thine empire driven,
May'st vanish with thy powers:
But, by the hearts that here have striven,
A loftier doom is ours!"

ALBANY SEED-STORE AND HORTICULTURAL REPOSITORY.

The subscriber having resumed the charge of the above establishment, is now enabled to furnish traders and others with FRESH GARDEN SEEDS, upon very favorable terms, and of the growth of 1853, warranted of the best quality.

The greatest care and attention has been bestowed upon the growing and saving of Seeds, and none will be sold at this establishment excepting those raised expressly for it, and by experienced seedsmen; and those kinds imported which cannot be raised to perfection in this country; these are from the best houses in Europe, and may be relied upon as genuine.

It is earnestly requested whenever there are any failures hereafter, they should be represented to the subscriber; not that it is possible to obviate unfavorable seasons and circumstances, but that satisfaction may be rendered and perfection approximated.

Also—French Lucern, White Dutch Clover, White Mulberry Seed, genuine Mangel Wurtzel, Yellow Locust, Ruta Baga, and Field Turnip Seeds, well worth the attention of Farmers.

W. THORBURN,
347 N. Market st. (opposite Post Office.)

Catalogues may be had at the Store; if sent for by mail, will be forwarded gratis. Orders solicited early, as the better justice can be done in the execution.

* Mr. Thorburn is also Agent for the following publications, to wit:—

NEW YORK FARMER and American Gardener's Magazine.
MECHANICS' MAGAZINE and Register of Inventions & Improvements.

AMERICAN RAILROAD JOURNAL and Advocate of Internal Improvements; and the

NEW-YORK AMERICAN, Daily, Tri-Weekly, and Semi-Weekly; either or all of which may be seen and obtained by those who wish them, by calling at 347 North Market street, Albany.

NOTICE TO MANUFACTURERS.

13th SIMON FAIRMAN, of the village of Lansingburgh, in the county of Rensselaer, and state of New-York, has invented and put in operation a Machine for making Wrought Nails with square points. This machine will make about sixty 6d nails, and about forty 10d nails in a minute, and in the same proportion larger sizes, even to spikes for ships. The nail is hammered and comes from the machine completely heated to redness, that its capacity for being clenched is good and sure. One horse power is sufficient to drive one machine, and may easily be applied where such power for driving machinery is in operation. Said Fairman will make, vend and warrant machines as above, to any persons who may apply for them as soon as they may be made, and on the most reasonable terms. He also desires to sell one half of his patent right for the use of said machines throughout the United States. Any person desiring further information, or to purchase, will please to call at the machine shop of Mr. John Humphrey, in the village of Lansingburgh.—August 13, 1853.

A29 U RM & F

It is stated in the St. Augustine Herald, that the Savannah and Florida Steam Boat Company propose, in connexion with the boat now running between Savannah and St. Johns, to carry their operations across the Peninsula and even to New Orleans. Peter Mitchell, Esq. of Savannah, (late of Florida, where he is known as an enterprising and talented gentleman, and also as extensively acquainted with their geography, resources and capabilities,) was recently commissioned by the company to examine the country between the navigable waters of Black Creek and those of the Santafe river, with a view to the facilities of this communication. It is proposed by the company to make an establishment on Black Creek, and another on the Stantaffe, and to communicate between these two points by a line of stages, it being but about sixty miles from one to the other. To their location on the latter river, steamboats will be accessible, and from it to New Orleans, with which they will be enabled to communicate in about two days. It is calculated, that by this route and with no other facilities over land than the usual accommodation stages and steamboats on the Atlantic and Gulf, an easy correspondence may be maintained between New York, via Charleston and Savannah, and New Orleans in eight days.

Railroads in England.—There is now building in England what they term "The great Western Railroad," which is to connect London and Bristol. Another is building between London and Southampton; another from London to Greenwich; another from London to Birmingham; another from Hull to Shelby; and the Northern Union Railroad.

An Otaheitan Bride.
The bride, Miss Kingatara Orurath, an Otaheitan, is the daughter of Demstrfgwomldammfr, one of the chiefs of the island, and is connected with most of the noble families of the kingdom. She is about sixteen years of age, of a bright mahogany color, with her cheeks tattooed in the most lovely manner, and her ears slit in a style peculiarly fascinating. Her eyes are large, and of a greenish color. Her lovely form, which was almost six feet six inches tall, was gracefully enveloped in an old blanket, and during the performance of the matrimonial rites, the fair bride stood before her happy lover modestly masticating a sugar cane. The young lady is said to be highly accomplished, and delighted the company assembled on this solemn occasion, by an exhibition of her superior skill in swimming. The bridegroom is a hearty mariner of Newport."

The body of a man six feet in height, without coat or hat, a cloth vest, satinet pantaloons, white cotton socks and brogans, with a stone of fifty pounds weight tied to his legs, was found near the bank of the river, five miles below St. Stephen's, Alabama.

[From the Village Post.]

LAND-BREEZE BETWEEN THE TROPICS.

"The forests of Brazil are filled with aromatic plants, whose perfumes are often wafted many leagues to sea."

To the billow-borne pilgrim, alone on the seas,
How sweet comes the perfume of land with the breeze!
'Tis the breath of a summer, eternal in prime;
The kindest fragrance of sun-gladdened clime!
Those wanderings of sweetness, how welcome they are!
That tell of a country unseen and afar.
Like the morning, their advent eye ushers a smile;
And the rover's heart dances in joyance the while.
To cheer his lone vigil at midnight, they tell
Of meadow and mountain, of forest and dell—
Till his eye o'er the ocean forgetteth to roam,
And he walks in his slumber the fields of his home.
Thus oft on life's billow, with bark tempest driven,
The voyager fancies the breathings of Heaven!
The past and the present remembering no more,
He greets in his vision the world that's before. C.

TOWNSEND & DUFFEE, of Palmyra, Manufacturers of Railroad Rope, having removed their establishment to Hudson, under the name of *Duffee, May & Co.* offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J. B. Jarvis, Eng. M. & H. R. E. Co., Albany; or James Archibald, Engineer Hudson and Delaware Canal and Railroad Company, Carbon dale, Luzerne county, Pennsylvania.
Hudson, Columbia county, New York, {
Janu 29, 1833. }

SURVEYORS' INSTRUMENTS.
Compasses of various sizes and of superior quality warranted.
Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by
E. & G. W. BLUNT, 154 Water street,
Jsl 64 corner of Maidenlane.

LOCOMOTIVE ENGINES.

THE AMERICAN STEAM CARRIAGE COMPANY, OF PHILADELPHIA, respectfully inform the public, and especially Railroad and Transportation Companies, that they have become sole proprietors of certain improvements in the construction of Locomotive Engines, and other railway carriages, secured to Col. Stephen H. Long, of the United States Engineers, by letters patent from the United States, and that they are prepared to execute any orders for the construction of Locomotive Engines, Tenders, &c. with which they may be favored, and pledge themselves to a punctual compliance with any engagements they may make in reference to this line of business.

They have already in their possession the requisite apparatus for the construction of three classes of engines, viz. engines weighing four, five, and six tons.

The engines made by them will be warranted to travel at the following rates of speed, viz. a six ton engine at a speed of 15 miles per hour; a five ton engine at a speed of 18 miles per hour; a four ton engine at a speed of 22 1/2 miles per hour. Their performance in other respects will be warranted to equal that of the best English engines of the same class, with respect not only to their efficiency in the conveyance of burthens, but to their durability, and the cheapness and facility of their repairs.

The engines will be adapted to the use of anthracite coal, pine-wood, coke, or any other fuel hitherto used in locomotive engines.

The terms shall be quite as favorable, and even more moderate, than those on which engines of the same class can be procured from abroad.

All orders for engines, &c. and other communications in reference to the subject, will be addressed to the subscriber, in the city of Philadelphia, and shall receive prompt attention.

By order of the Company,
WILLIAM NORRIS, Secretary.

December 24, 1833.

For further information on this subject see No. 49, page 772, Vol. 2, of Railroad Journal.

RAILWAY IRON.

Ninety-five tons of 1 inch by 1/2 inch,	Flat Bars in
300 do. 1 1/2 do. 1/2 do.	lengths of 14 to 16
40 do. 1 1/2 do. 1/2 do.	feet counter sunk
300 do. 2 do. 1/2 do.	holes, end cut at
300 do. 3 1/2 do. 1/2 do.	an angle of 45 de-
soon expected.	grees with spli-
	cing plates, nails
	to suit.

250 dn. of Edge Rails of 36 lbs. per yard, with the requisite chairs, keys and pins.

Wrought Iron Rims of 30, 33, and 36 inches diameter for Wheels of Railway Cars, and of 60 inches diameter for Locomotive wheels.

Axles of 2 1/2, 3, 3 1/2, 4, 5, and 6 inches diameter for Railway Cars and Locomotives of patent iron.

The above will be sold free of duty, to State Governments and Incorporated Governments, and the Drawback taken in part payment.

A. & G. RALSTON.

9 South Front street, Philadelphia.

Models and samples of all the different kinds of Rails, Chairs, Pins, Wedges, Spikes, and Splicing Plates, in use, both in this country and Great Britain, will be exhibited to those disposed to examine them.

d71meowr

ENGINEERING AND SURVEYING INSTRUMENTS.

The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely new: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy; also, a Railroad Goniometer, with two Telescopes; and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.

WM. J. YOUNG,
Mathematical Instrument Maker, No. 9 Dock street, Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.

Baltimore, 1832.

In reply to thy inquiries respecting the instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad. I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable.

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sights, leaves the engineer scarcely anything to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to later angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,

JAMES F. STABLER, Superintendent of Construction of Baltimore and Ohio Railroad.
Philadelphia, February, 1833.

Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors.

E. H. GILL, Civil Engineer.

Germantown, February, 1833.

For a year past I have used Instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these Instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY R. CAMPBELL, Eng. Philad.,
Germantown and Norrist. Railroad

STEPHENSON,

Builder of a superior style of Passenger Cars for Railroads
No. 264 Elizabeth street, near Bleecker street,
New-York.

RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part of the New-York and Harlem Railroad, now in operation.
J25 tf

RAILROAD CAR WHEELS, BOXES AND OTHER RAILROAD CASTINGS.

Also, AXLES furnished and fitted to wheels complete at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to. Also, CAR SPRINGS.

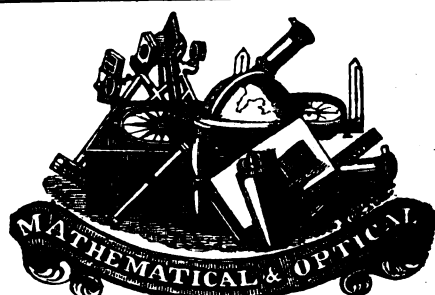
Also, Flange Tires turned complete.

J8 ROGERS, KETCHUM & GROSVENOR.

NOVELTY WORKS,

Near Dry Dock, New-York.

THOMAS B. STILLMAN, Manufacturer of Steam Engines, Boilers, Railroad and Mill Work, Lathes, Presses, and other Machinery. Also, Dr. Nott's Patent Tubular Boilers, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited.
mls



INSTRUMENTS.

SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

EWING & HEARTE, at the sign of the Quadrant, No. 53 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude.

For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewing & Hearte.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable. They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES F. STABLER,

Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' Instruments of your Manufacture, particularly Spirit levels, and Surveyors' Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These Instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

WILLIAM HOWARD, U. S. Civil Engineer.

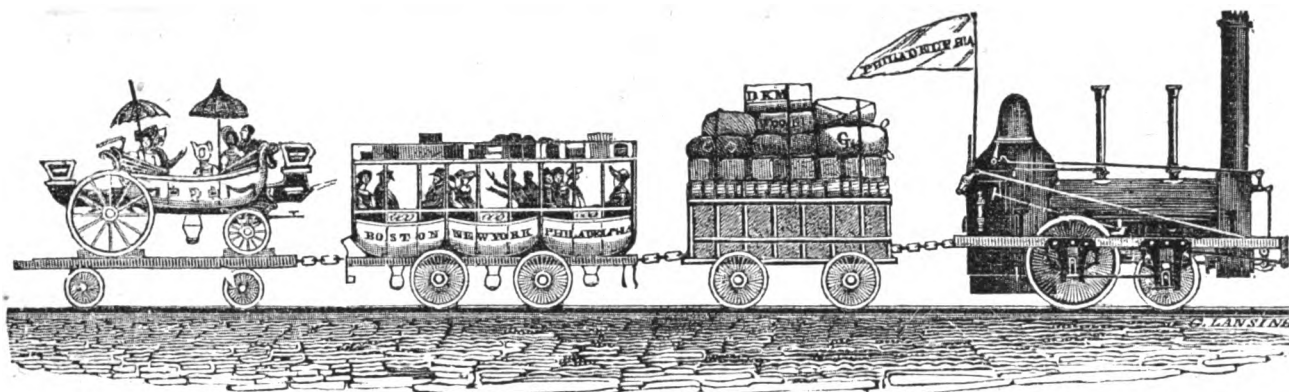
Baltimore, May 1st, 1833.

To Messrs Ewing & Hearte.—As you have asked me to give my opinion of the merits of those Instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming acquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprise so well merits, I remain, yours, &c.

B. H. LATROBE,

Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them, upon application, to any person desirous of perusing the same.
m36



AMERICAN RAILROAD JOURNAL, AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT No. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, EDITOR.]

SATURDAY, JUNE 21, 1834.

[VOLUME III.—No. 24.]

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, JUNE 21, 1834.

Should this number of the Journal fall into the hands of any gentleman who is not a subscriber, he is desired to consider it a *modest* invitation to *become so*, and to remit a \$5 bank note, and in return he shall receive the Journal commencing *either* with the 1st, 2d, or 3d vol., or at the *middle* of the 3d volume, which will be on the 1st July, and a receipt for the money. Let him look at the contents of this number, and then ask where he can get more practical and useful information for 6d. ? or where he can find a work that contains the *same kind* and amount of information for \$3 a year ?

Are the people in his neighborhood engaged in constructing railroads or canals, or M^d Adam roads ? then in the Journal will they find something to aid and promote the cause. Does any new plan or method of constructing make its appearance, or excite action, some account of it may be found in the Journal. Allow me then to urge every one who reads this, that is not a *subscriber* already, to send his order at once, and it shall be supplied, either for *past, present, or future* volumes.

Bound volumes, in two parts, \$4—in one part \$3.50; stitched in paper cover \$3.25; forwarded by mail as published once a week, \$3.

The attention of our readers is called to the article on the Chesapeake and Ohio Canal, and to that on Steam, and Steamboats. They are both interesting.

HARLAEM RAILROAD.—The Harlaem Railroad commences at Prince street, in the Bowery, and follows the line of the 4th Avenue to Harlaem, 7½ miles, 5 miles of which, to

Yorkville, are completed. The first part of it, or to 14th street, has a single track, laid in the most substantial manner on granite sleepers; from 14th to 23d street, there is a double track, also on granite sleepers; from 23d to 84th street, wooden sleepers are used, and a double track nearly all the way.

There has been much deep cutting; in some places to the depth of 30 feet, through solid rock. Also some high embankments, especially a little south of Murray Hill.

This road was chartered in 1831, with a capital of \$350,000. Cars were first used on a part of it—to Murray's Hill—in June, 1833; they now run every half hour to Yorkville. Probably 150,000 passengers have rode upon it. The cars are elegant and commodious, drawn by horses. The fare for each passenger is 12½ cents. When the road shall have been brought down to Wall street, as it should, and will be—when the citizens become satisfied that it is not only easier, cheaper, and far less dangerous than the omnibuses—thousands will ride where there are now only hundreds; and thousands will ride out and take the fresh air, and a view of the green fields, who now never, or seldom, enjoy that luxury. It *must* and will be extended to Wall street, if not to the Battery, short of which it ought never to stop, so that those living at the extremes may interchange civilities without the expense of a hack, or the inconvenience of being jammed into an omnibus, and the risk of a race in Broadway with a rival line.

This road will, I have no doubt, great as the expense is, be a good investment, when completed, for passengers alone.

BURDEN'S BOAT.

Mr. Burden's Boat has been out twice since the drawing (see page 373) was taken, and each time has acquired a greater velocity than on its previous trial. It acquired yesterday a velocity of *twenty-five* revolutions of its wheel, of 30 feet diameter, per minute, or more than 20 miles per hour.

Not having been able to accept of Mr. Burden's invitation to accompany him on his excursion on Thursday, we avail ourselves of the following from a gentleman who was on board:

Another excursion was made yesterday on

the Hudson River, and the result fully bears you out in what you have before stated, "that Mr. BURDEN will accomplish all that he has professed to do." The boat went at the rate of more than 20 miles per hour. I will venture to assert that if a person was blindfolded, and put into the cabin, he could not possibly distinguish that he was on board any vessel, even if going at its greatest speed—no noise is heard from the working of the machinery—the entire absence of that tremulous motion so unpleasant in other steamboats, is a sufficient test of its improvement. Another advantage, and a very important one, will not fail to attract the notice of every reflecting mind—it causes no swell whatever in the river; the smallest wherry can come alongside without inconvenience. It will be obvious how useful vessels similarly constructed will be on canals and narrow rivers. No injury will be done to the banks, which hitherto has been the chief obstacle to their introduction. And when it is taken into consideration, the extraordinary speed which can be accomplished by such a boat, we must come to the conclusion that it will confer great benefit on this country.

Mr. Burden is very sanguine of accomplishing all that he has promised. He is sole owner of the boat and of the patent. The contemplated arrangement with the Hudson river company last fall having been abandoned.

METEOROLOGICAL STONE.—A Finland journal gives an account of a singular stone in the north of Finland, where it answers the purpose of a public barometer. On the approach of rain, this stone assumes a black or dark grey color, and when the weather is inclined to be fair, it is covered all over with white specks. This stone is, in all probability, an argillous rock, containing a portion of rock-salt, ammonia, or salt-petre, and absorbing more or less humidity in proportion as the atmosphere is more or less charged with it. In the latter case, the saline particles, becoming crystallized, are visible to the eye as white specks.

FOSSIL HORNS.—In excavating the Lancaster Lateral Canal, near a place called the "Deep Cut," bones of extraordinary dimensions have been discovered. Among the curiosities found is a horn six feet in length, weighing 44 lbs., and measuring at the butt end sixteen inches. Also, a tooth weighing 6½ lbs.

CHESAPEAKE AND OHIO CANAL.—The following interesting and valuable communication was duly received, but it has been detained for the purpose of publishing it in another form at the same time, to accompany the forthcoming *Railroad and Canal Map*—with which we hope to be able to give some particulars relative to other canals, as well as railroads, in the United States. The apology will, we trust, be satisfactory to our correspondent, and our readers also—who is particularly requested to continue his favors, as he may find leisure. Such communications will be found interesting and useful, not only in this country but also in Europe, where they will find their way if they are to be found in the *Journal*—(we say this without boasting.)

We may now, we think, again call upon engineers and other gentlemen, connected with railroads and canals in different parts of the country, to furnish us with similar statements of the works under their charge, or with which they are familiar, that we may be able to give a condensed account of them. It is that with which the public cannot be too familiar—nothing tends more to promote a useful object than familiarity with its details.

Statistical Facts in relation to the Chesapeake and Ohio Canal. To the Editor of the American Railroad Journal.

WASHINGTON, April 11, 1834.

SIR,—The following statistical facts, in relation to the Chesapeake and Ohio Canal, I have collected from the mass of documents which have been printed by Congress and the Company, and which amount in bulk to several octavo volumes. I have not, either, all of their reports to refer to, as the price of an entire copy of the proceedings of the board of directors and engineers costs now \$20 to \$25, and many of the papers are very scarce. Such as are given below will, I hope, answer your purpose. Alter them and change them as may best suit your views.

The general convention of Delegates from Pennsylvania, Maryland, Virginia, the District of Columbia, and one or two of the Western States interested, first met at Washington, D. C., in November, 1823, to determine on the proper measures to be adopted in reference to the successful prosecution of this great work of internal improvement. The first charter was granted by Virginia, in January, 1824, which was confirmed by Maryland in January, 1825, and by Congress in March of the same year. Pennsylvania granted her charter with some restrictions, (relative to portions of the appropriations of Congress being applied to the construction of the western section, &c.) in February, 1826. All four of these legislative bodies have since passed various acts, extending and restricting the powers of the Company.

SUBSCRIPTIONS.—Books were opened in 1826, after the confirmation of the charter by the several states.

Private subscriptions, - - - \$610,000
By Maryland, in March, 1826, - 500,000
Maryland, in 1834, granted \$50,000 additional: \$25,000 cash, and the remainder when a further subscription was made by Congress.
By Virginia, in 1833, - - - 250,000
Virginia had subscribed, in 1826, her interest in the Potomac Canal Company, which was then valued at 2 or \$300,000.

By Corporation of Washington, - 1,000,000
By Corporation of Alexandria, - 250,000
By Corporation of Georgetown, - 250,000
By Congress, - - - 1,000,000

The cost, as estimated by the U. S. Engineers

on the first surveys, was \$22,375,427.69; and, by Geddes and Roberts, the company's engineers, since that time, was \$9,347,408.69.

The projected route, (and in its location, thus far, it has deviated very little from the line originally laid out,) was up the valley of the Potomac river, as far as Cumberland; thence it follows the valley of Wills' creek, as far up as the mouth of Bowman's run, from which place it is to cross the summit ridge by a tunnel, railway, or inclined planes, as the company may see fit, the privilege of selecting being granted by their charter. (It is most probable that the company will adopt a railway with stationary power, as it will in the end prove the cheapest and most convenient.) The western course is thence down Castleman's river and the Youghagany, and the Monongahela, to Pittsburgh. (It is doubtful, I think, whether this line, the western section, will be adopted, as the United States have been projecting improvements on the Monongahela river, so as to render it navigable as far as Brownsville, 55 miles by the course of the river above Pittsburgh, and it will be shorter and more convenient to end at Brownsville than its present projected termination.) The total length of this projected route is 341 miles, 676 yards, and is divided into the eastern, the middle or mountain, and the western sections, the former extending from Georgetown to Cumberland, 185 miles, 1078 yards; the middle section, thence to the mouth of Castleman's river, 70 miles, 1,010 yards; and the latter thence to Pittsburgh, 85 miles, 348 yards.

DIMENSIONS OF THE CANAL.—The size of the Erie canal was at first adopted as sufficient for the Chesapeake and Ohio Canal. But this idea was soon abandoned, and the following size determined on: 60 feet wide at surface, 42 feet at bottom, and 6 feet deep,

giving a cross section of 366 feet. But for the purpose of giving sufficient water for manufacturing purposes, the first two miles above Georgetown were widened to 70 feet, with a depth of 7 feet, and the succeeding two miles have a width of 80 feet, and 7 feet depth. Between Harper's Ferry and the Point of Rocks, in some few places, and for short distances, it has been narrowed to 50 feet, and above Harper's Ferry it has been widened to 90, 100, 120, and even 150 feet, in several places. The locks are 100 feet long by 15 wide, in the chamber, and 6 feet deep. The tow paths are 12 feet wide, and the berm bank 8 feet. All the culverts, aqueducts, and locks, are built of solid stone masonry, laid in hydraulic lime. Many of the locks are so constructed, by lengthening the side culverts and multiplying their outlets, as to be filled in one half the usual time.

In November, 1830, the sections extending from the Seneca feeder to the termination of the old canal, around the Little Falls of the Potomac, (a distance of 17 miles and 774 yards,) were finished and opened for use. The sections in Georgetown were finished in August, 1831. The sections from the Seneca feeder to the Point of Rocks, (a distance of 26 miles and 363 yards,) were open for use in the spring of 1832, and by the end of 1833 it was completed as far as Shepherdstown, (72½ miles from Rock Creek Basin, Georgetown.)

Between the Georgetown Basin and the Point of Rocks, a distance of 48 miles, 118 yards, is a rise of 217 feet, overcome by 27 locks: for the lift and distribution of which see table given below. Between the Point of Rocks and Williamsport, (to which the canal will be open from Shepherdstown this spring or summer,) a distance of 66 miles and 762 yards, is a rise of 136 feet, overcome by 17 locks: see table.

No. of lock.	Lift.	Construction.	Distance / Total distance from lock to lock.		Remarks.
			m. yds.	m. yds.	
Title L.	at l. wat.	Cut stone. Free stone.			
No. 1	3 ft.	Same as tide lock.	661	601	
2	8	Same.	81½	742½	
3	8	Same.	100½	843	
4	8	Same.	98	941	
5	8	Partly of hammered and partly of cut stone.	4 909	5 90	
6	8	Same. Free stone.	637	5 727	
7	8	Cut, granite, and free stone.	1 1075	7 42	
8	8	Red sand stone. Cut.	1 504	8 636	
9	8	Granite and free stone. Cut.	604	8 1240	
10	8	Cut stone. Granite.	153	8 1393	
11	8	Cut. Red sand stone.	319	8 1712	
12	8	Cut stone. Granite.	545	9 497	
13	8	Same.	148	9 645	
14	8	Granite. Cut.	148	9 793	
15	8	Red sand stone. Cut.	3 1740	13 773	
16	8	Same.	311	13 1084	
17	8	Same.	618	13 1702	
18	8	Same.	178	14 120	
19	8	Same.	134	14 252	
20	8	Same.	198	14 452	
21	8	Same.	2 623	16 1075	
22	7	Same.	2 1544	19 859	
23	8½	Same.	2 856	21 1715	
24	8½	Same.	1174	22 1129	
25	8	Same.	8 23	30 1152	
26	8	Same.	8 1137	39 529	
27	8	Same.	2 20	41 549	
				48 118	
28	6	Granite transported on Balt. & O. Railroad, and flint (hard white) stone from neighborhood. Cut stone.	1337	48 1415	
29	7	3 Balt. granite. 4 hard white flint. Cut.	1 1597	50 1292	
30	8	Patapsco granite 1-7 & red sand stone. Cut.	4 143	54 1435	
31	8	Granite and flint from neighborhood.	3 121	57 1556	
32	8	Granite & lime stone from neighborhood. Cut.	2 332	60 128	
33	8	Lime stone. Cut work.	760	60 888	
34	8	Same.	1556	61 684	
35	8	Same.	1267	62 191	
36	8	Same.	173	62 364	
37	9	Same.	4 909	66 1273	
38	5	Same.	5 1436	72 959	
39	6	Same.	1 287	73 1226	
40	9	Same.	6 447	85 940	
41	10	Hammered stone Lime stone.	6 1740	92 920	
42	9	Same.	200	92 1120	
43	9	Lime stone. 3 miles transported. Cut stone.	200	92 1320	
44	10	Same.	6 1020	99 580	

Besides the above 44 lift locks, a communication with the river Potomac is to be effected through the guard locks at the entrance of the feeders from the Potomac, and also through the several lift locks designed for the Virginia trade, and constructed in compliance with the Virginia charter. Four of these locks are required to be constructed similar in size and construction

to the other lift locks of the canal, viz.: one opposite the mouth of Goose creek, which enters the Potomac, opposite the foot of lock No. 25; another at the Point of Rocks; another opposite Shepherdstown; and the 4th, near the mouth of Opequon. The latter has since, however, been dispensed with, as its purposes are subserved by the transfer of locks Nos. 41

and 42, (which were located 2 miles above the mouth of Opequon,) to 2 miles below the mouth of that river. (This transfer reduced the slack water navigation, between guard lock No. 3 and lift lock No. 41, from 7 to 3 miles, and increased the expense \$100,000. There is also a lift lock in addition to the above constructed, connecting with the Potomac opposite the junction of the Shenandoah with the Potomac at Harper's Ferry, 637 yards above lock No. 32. It has 10 feet lift, and is, in other respects, similar to the other locks.

Culverts.—Below the Point of Rocks there are, inclusive of roadways, 59 culverts, of which the total cost was \$110,000. Three of these culverts are of 12 feet span each, 2 of 16 feet span each, (one over the Tuscarora, 2 miles above the Monocacy aqueduct, and the other 1 mile below the Point of Rocks,) and 1 of 2 arches of 16 feet span each over the Little Monocacy river: the total number of perches of masonry in these 59 culverts amounts to —, costing \$51,872—32 culverts, nearest Point of Rocks, 11,357, \$50,000. Between the Point of Rocks and Harper's Ferry the number of culverts is 19, containing in all 6,839 perches of masonry, and the total span of which was 158 feet. There are, also, above Harper's Ferry, 41 culverts, the estimated price of which was \$44,300. The culverts below Harper's Ferry are generally 110 feet long; while above, owing to the contraction in the width of the canal, they do not exceed 100 feet.

Aqueducts.—No. 1. Seneca aqueduct, built of red sand stone from the immediate neighborhood, is 114 feet long between the abutments, which, with the 2 piers, rest on a solid foundation. There are 3 arches of 33 feet each. Cost \$22,784.

Aqueduct No. 2. Monocacy aqueduct, built of a white granite stone, (obtained within 3 miles of the site of the aqueduct,) is 438 feet in length between the abutments, and is 516 feet from end to end of the wing walls which project from them. There are 7 arches of 54 feet span each, and 9 feet rise, (segments of circles,) the radius of intradoes of which is 45 feet. It contains 9,788 perches of masonry, (exclusive of the rough walls in which the cut masonry of the wings terminates.) Cost, \$125,000.

Aqueduct No. 3 crosses the Catoclin, a tributary to the Potomac; it has 3 arches, a semi-circular, of 20 feet span each, and the third a semi-ellipse of 40 feet span and 10 feet rise, supported on piers, 6 feet wide by 33 feet long, while the parts under water (7 feet in depth,) are 8 by 35, and founded on solid rock. Total cost, \$33,500.

Aqueduct No. 4 is over the Antietam, a branch of the Potomac, entering 3 miles above the Government dam above Harper's Ferry. The abutments are 9 feet thick, and 106 feet apart. It has 3 semi-elliptical arches, 2 of 28 feet span, and the 3d of 46 feet span, with a rise of 10 feet each. The foundations of the piers and abutments are on solid rock. Greater portions of them are of cut stone masonry and expensively built. Lime stone from the neighborhood used. The towing path parapet is 7 feet thick at bottom and 6 at top. The berm parapet is 5 feet thick at bottom, and 4 at top. Width of track is 20 feet at bottom and 22 at top. Cost, \$22,850.

Aqueduct No. 5 is over the Conococheague, which enters the Potomac at Williamsport. It has 3 arches of 60 feet span each; two piers and two abutments. The piers are 12 feet thick at the base. The arches are 32 feet wide and 15 feet rise.

Tow-path parapet, 7 feet thick at bottom, 6 at top; berm parapet, 5 feet thick at bottom, 4 at top.

The walls are raised 7 feet above the bottom of the canal.

Estimated cost, \$40,260. Not quite finished in December last.

Feeders.—No. 1. The Little Falls feeder supplies 4½ miles of canal. An arched stone dam is thrown across the Potomac, and the admission of water into the canal is regulated by a

single guard gate, and enters at the foot of lock No. 5. Length of the dam, 1750 feet, height 4 feet. Cost —. The feeder is a part of the old canal around the Little Falls, constructed previous to 1800.

No. 2. The Seneca feeder supplies 17 miles, although at the foot of lock No. 18, at the Great Falls, an additional supply is received from the Potomac, through a small arch under the towing path. The dam across the Potomac for this feeder is — feet high, and 25,000 feet in length, and cost —. The water is admitted into the canal through guard lock No. 1. The dam is of stone and arched.

No. 3. The canal for the next 40 miles depends almost entirely for water on the supply it receives from the Potomac at the head of Harper's Ferry Falls. The dam constructed by the Government for the use of the United States armory at Harper's Ferry answers all necessary purposes here, and no more water is drawn off than was formerly used by the old canal, which has been closed since the opening of the main canal. (A small feeder from the Tuscarora, which enters the canal 17 miles below the head of Harper's Ferry Falls, also assists towards supplying this section.) The water from the Harper's Ferry feeder is admitted through guard lock No. 2, situated near lift lock No. 35. This dam is — feet high, and — feet long. Cost of company's works here —.

No. 4 supplies 23½ miles of canal. The dam across the Potomac is near —, and is 20 feet high, and 810 feet long, and 60 feet base. The water is admitted into the canal through guard lock No. 3, which is 1 mile 320 yards above the dam. Cost of dam, lock, and other works connected with the feeder, —.

No. 5 feeds 19 miles of canal, and is situated 8 miles above Williamsport. The dam across the Potomac is at —, and is 20 feet high, 706 feet long, and 20 feet base. The water is admitted through guard lock No. 4, 320 yards above the dam. Cost —.

Some facts I have not here been able to find out, but which I hope you will be able to obtain, should they be of any service.*

Costs.—The following work, done between the Point of Rocks and the Georgetown Basin:—Common excavation, 1,893,666 cubic yards; Hard pan do., 439,071 do.; Quarry rock do., 75,472 do.; Rock blasted, 398,524 do.; Embankment, 1,533,850 do.; Puddling, 96,092 do.; Walling, 231,064 cubic perches. Costing \$1,032,161; for grubbing, \$12,892; extras, \$40,800.

Extra on this section:—Pier, basin, and tide lock, at Georgetown, \$78,943; Locks, \$232,642; Lockhouses, \$16,315; Bridges, \$32,925; Aqueducts, \$23,444; Culverts, \$51,872; Waste weirs, \$8,619; Dams, \$30,491; Guard locks and feeders, \$15,404; Improvements, \$22,002.

The masonry on the dams, locks, aqueducts, pay for engineers, officers of the company, &c. are not included in the above. Items given separate.

Work done and to be done from the Point of Rocks to Williamsport—all under contract, and a great portion finished:—Common excavation, 2,733,905 cubic yards; Rock do., 439,752 do.; Slate do., 8,140 do.; Embankment, 1,350,149 do.; Puddling, 37,617 do.; Walling Stone, 181,029 cubic perches. Actual and estimated cost of the above, \$936,735.74; for grubbing, \$9,653; extras, \$3,564.13. Total, \$954,952.87, besides the masonry on locks, aqueducts, culverts, bridges, &c. &c.

I have not been able to obtain a full aggregate amount of the expenditures of the company, nor an actual statement of the entire cost of the canal. It has had to meet enormous law expenses on account of its difficulties with the Baltimore and Ohio Railroad Company; besides being subjected to very large losses in the delay occasioned by the injunction of the Chancellor of Maryland in the above case. The right of passage, too, over the various lands of private individuals has cost immense sums.

* We have not been able to fill the blanks.—Ed. A. R. J.

The pass at the Point of Rocks, held in dispute between the two companies, was \$11,153 feet long, or 2½ miles. The distance from Harper's Ferry to Cumberland, according to Geddes and Roberts' report, is 127 miles, and the amount of all the narrow passes where the works would come in collision would amount in all to 45 miles.

The reports of the united engineers, who have been at various times invited by the company to inspect the different portions of the work, are all declaratory of the perfect and substantial manner in which the work has been constructed throughout. These reports, have been called for by Congress, and, on being submitted, have been ordered to be printed. They contain a great deal of information relative to this grand work, and are worthy of perusal. This spring, notwithstanding the many delays and difficulties of the most arduous and imposing nature the company have had to contend with, will see the canal opened some distance above Williamsport, a distance of 102 miles of canal, and 14½ slack water navigation, fully complying with the charter, which required upwards of 100 miles to be completed within 5 years from its commencement, or rather from October, 1828. Some report I have just got hold of, says the entire cost of this construction was \$3,650,000, of which \$450,000 was expended from Little Falls down.

I can add that the prospects of the canal are truly encouraging. Having command of an extensive coal region, and passing through a highly cultivated valley, where there are also numerous grist and other mills, and abundant mineral resources besides the coal, they can never be at a loss for means of rendering the canal profitable. They cannot experience much competition, either from the Baltimore and Ohio Railroad, on account of the heavy weight of the produce to be conveyed, and cheapness of conveyance on the canal. The Washington city branch of the Chesapeake and Ohio canal extends from the Rock Creek Basin on the western borders of the city to the mouth of Tiber Creek, following the bend of the river Potomac, (being constructed along the bank of that river, and in some few places encroaching on the river itself,) a distance of 1 mile and 373 yards. A tide lock at the eastern termination brings it to the level of the Potomac. The cost of this branch was \$25,978.47.

Very little has yet been done on the Alexandria branch of the canal. Congress has made an appropriation of \$60,000, I believe, for the construction of an aqueduct at Georgetown, across the Potomac, for the transfer of the canal to the Virginia shore. The length of this branch is 7 miles and 416 yards, and the estimated cost \$372,204.55. The aqueduct has been contracted for some time since, and is now in progress of construction under the superintendence of Capt. Turnbull, U. S. topographical engineer. It is 1714 feet long; the canal way is to be 16 feet wide at bottom, 18 feet at top, and 5 feet deep, and thence, to Four Mile run, the size of the canal is to be 32 feet wide at bottom, 50 feet at top, and 6 feet deep. At the embankment, at Four Mile run, it is to be 18 feet wide at bottom, 36 feet at surface, and 6 feet deep. Thence to Alexandria it is to be enlarged to the established dimensions of the Chesapeake and Ohio Canal.

H. N. C.

P. S.—We have received the communication promised, giving the rates of toll on the canal, which will be given in our next.

The Undulating Railway—Final Reply of Mr. Badnall to Mr. Cheverton. [From the London Mechanics' Magazine.]

Sir,—Mr. Cheverton's dreadful inflection—*his rod*—hath, at last, fallen upon me, without his own character, or the good taste of your readers being, in the slightest degree, "ill-consulted"—without the most distant apparent inclination to render your pages the medium of a personal quarrel between himself and me! H

will not descend to imitate my dull, vituperative style! He would shudder to characterize an opponent as "a coarse practitioner from the *abattoir*!"—"a mere hacker of flesh and bones!" He is a man of more gentlemanlike bearing than to fume out false accusations! No, Sir, he stands upon too lofty an eminence! His philosophic and refined understanding could not possibly stoop to mere personal abuse, or controversial subterfuge! No, he is the very prototype of wisdom!—an immortal emblem of refinement!—a breathing picture of urbanity and peace!—gentle as a lamb—sweet as honey—mild as new milk—"parfaite amour" in toto! He is not the cur who, when he meets with an unflinching antagonist, flies growling and barking to his kennel! He is not the tamed pugilist who swears that a blow is false because he cannot parry it!—nor is he slippery as the eel, which, by its twistings, and its twinings, and its slime, evades the grasp of its pursuer, and buries itself in its native mud! No, Sir, Mr. Cheverton is a being of far different stamp!—his mental qualifications—his scientific reputation—his temper—his writings—his sentiments—will all bear the test of the most rigid scrutiny! His theories will all be established by practical results! The halo round his head will brighten as each opinion becomes confirmed by experiment! In a word, his letters on "the undulating railway," while they will immortalize the fame of the *Mechanics' Magazine*, will become never-dying monuments of sterling talent and correct observation, from the hour when that trial takes place, which a Dalton* has been indiscreet enough to recommend! Till that hour arrives, I almost feel inclined to "leave him alone in his glory," in order that I might, with double effect, magnify his transcendent name, and prostrate myself before his living monument of wisdom! But—I cannot resist the inclination which his letter has excited, to pay him some passing homage; for neither the "war-whoop of the Mohawk," nor the "inspiring blast of the clarion," shall be compared to the sounding of his brass, or the tinkling of his cymbals!

Yet how shall I, to whom "nature has been so niggardly," sufficiently extol the praise of one who, declining to quarry all ignoble game, is able to defend himself against a weapon capable of dividing "soul from body," the very "marrow from the bones?"

Immortal champion! inspired philosopher! tender and kind-hearted victor! may this humble panegyric be a memento of my deference to thy fame, as long as the *Mechanics' Magazine* may survive the wreck of time—and may that be for ages!

Having thus, Mr. Editor, in sincere good humor, squared one part of my account with Mr. Cheverton, I beg to acknowledge, like him, the gratification which I feel at the prospect of this too lengthened controversy being terminated. The venom which he thought it prudent, in the first instance, to cast on me, I good-humoredly endeavored to throw back; but his last effusion was of so different a nature—so characteristic of a noble and unoffending disposition, that I have met, as it deserved, with an unbounded expression of veneration. As you have admitted, in your valuable columns, his unmeasured declarations, I trust that equal justice may be done to me; and that you will, by publishing this reply, permit me the opportunity of proving that he who cannot, by fair and manly argument, defeat a literary or scientific opponent, stands little chance of doing so by an opposite course of conduct.

Such was my object in noticing Mr. Cheverton's extraordinary letter (vol. xx. p. 73). Had it been otherwise, my silence should have shown my contempt for the vulgar sneers and false accusations with which that document abounded. But it is passed, and I congratulate Mr. Cheverton on the victorious result of his attack.

As no unnecessary time will now be lost in trying, by ample experiment, on some line or other, the merits of the undulating question, I would propose, to your readers in general, that all further controversy should rest until the experiment be made. Practice can alone determine whether I or my opponents have been right or wrong in our anticipations, and whether Mr. Cheverton's arguments or mine will be creditably substantiated. The note which you have attached to my last communication leads me to hope that you may concur in my present opinion;* and if so, while Mr. Cheverton may try at his leisure any further experiments he may please at the National Gallery of Practical Science, I will direct my attention to the means of elucidating the problem in a far more satisfactory way. If, on a trial being made, I find myself in error, I will frankly confess my incompetency to argue this subject, and my folly at having so warmly and so boldly espoused it—if otherwise, I trust there are many of your readers who will give me credit for some patience, and for some intellectual capabilities beyond the *canaille* sphere in which Mr. Cheverton has been so anxious to place me.

The test shall not be less difficult than I originally proposed. Whether the experimental railway be 6, 8 or 10 miles in length, I maintain that *any locomotive engine will traverse an undulating line, with a load which is its maximum load on a level, in half the time which it will occupy in traversing the same distance with the same load on a dead level railway, and without greater waste or consumption of fuel.* And I, moreover, say, that *any locomotive engine will traverse an undulating line at a great velocity with a load which that same engine cannot move upon a level line.*

Whenever this trial may take place, your readers shall have ample notice of it; and if you, Sir, will undertake the office of umpire, I shall cheerfully abide by your decision.

In the mean time, it would be mere repetition, and an unnecessary prolongation of our arguments, were I to reply at length to the more solid parts of Mr. Cheverton's last letter. One or two points, however, I cannot help touching upon. First, as to "*locomotive duty*," which he so frequently harps upon. All my arguments, of late, have been almost confined to the practical consideration of locomotive duty. I do say that by employing gravity as an auxiliary force, we save locomotive power. What! Mr. Cheverton exclaims, can you take advantage of gravity without being obliged to repay what you borrow? Yes, is my reply—and yet *no perpetual motion*, Mr. Cheverton! How? Mr. Cheverton would ask. My answer is simply this, and whether it be true or false, *experience will prove—velocity is gained by taking advantage of gravity.* Friction on railways is, in my humble opinion, *not as the spaces*, but as the *times or velocities*. If this be true—and if a greater velocity be attainable on an undulating than on a level railway, there is, (exclusive of any difference in friction arising from the particular inclination of the plane,) *less friction on an undulating than on a level railway.* Locomotive steam power is therefore saved.

The next point I wish to allude to, is Mr. Cheverton's observations about a lecture given to me, or some of my acquaintances, by Professor ***** in the National Gallery. Does he mean Professor Ritchie?—if so, I was not present. That gentleman and Mr. Locke had, I know, a conversation together; but the only time that I have had an opportunity of conversing with Professor Ritchie on the subject, was

* We do perfectly; but it must be with reservation to the claims of Mr. Whitehead and Mr. McKinnon, to whose papers, in opposition to the undulating system, (now many months in hand,) we stand pledged to give insertion. We shall be glad to have their assent to the proposed postponement in the text.—Ed. M. M.

† It will occur to your readers that I have frequently stated as my opinion, that an engine would convey, on an undulating line, at least twice the load which the same engine could move on a level, at the same velocity. Such is my opinion now; but the test which is above proposed will, I am sure, be deemed sufficient to decide the question at issue, and it will be found to accord with the terms of my original challenge.

recently, when he did me the honor to spend part of the day with me in Liverpool. In a word, the only individuals whom I can call to mind as having expressed a decided opinion in my presence, when in London, adverse to the undulating railway, were Mr. Saxton and a friend of his, whom I begin to think was Mr. Cheverton; and as to any acquaintance of mine then present being afraid of their "*badgering*," I rather think Mr. Cheverton has imbibed an erroneous impression. If it were necessary, I could publish, in this letter, a list of persons who are advocates of the undulating railway, amply sufficient to out-balance the strongest testimony which Mr. Cheverton and his friends can advance against it,—but the best testimony is *practice*, and upon that I throw the merits of the case.

Lastly, Mr. Cheverton offers some important practical objections, which I confess to be more worthy of notice than any points which he has hitherto advanced. But, serious as they appear, they will not, on consideration, be found of any real weight. In the first place, we have to determine what is a *safe velocity*—that being determined, how can it be attained on a level railway with heavy loads? Unless gravity be employed at starting, as an auxiliary force, a much more powerful engine would be requisite to move a heavy load from a state of rest, than to continue it at a given maximum velocity; and if gravity be employed at starting, the engine and load must ascend again to a like summit, in order to maintain the starting advantage; and if so, what is this but an undulating railway? Does Mr. Cheverton imagine that a perfect cycloid, or a perfect arc, alone constitute my idea of an undulation? Far from it—he may descend a hill, run four miles on a level, and ascend to an equal elevation; and by doing this would realize a system of undulation which might, probably, be adopted with advantage in some cases; for, with heavy loads, a velocity might be generated by the first descent which could not, with the same engine, be generated on a dead level; and this being maintained on the level, would enable the load to ascend to a like elevation. But supposing the undulations to be a series of regular segments of circles, wherein consists the difficulty of sustaining an average velocity of 20 or 30 miles per hour, without an increase of speed? Is it necessary to work the engine down every descent? One of the leading advantages which I anticipate is the great saving of that steam expenditure which is now necessarily incurred in maintaining high velocities on a level. Again, it will require very powerful engines to attain high velocities, with heavy loads, on level railways: whereas, such powerful engines will not be so necessary on undulating railways, and for the reasons previously stated.

I now, Sir, unless again attacked by Mr. Cheverton, close with pleasure this twelve-month's warfare, anxiously awaiting the result of practical trials; and sincerely hoping, although a few waspish observations have occasionally intermingled with a subject to which they should have been altogether foreign, that some information and benefit may have been derived from the discussion.

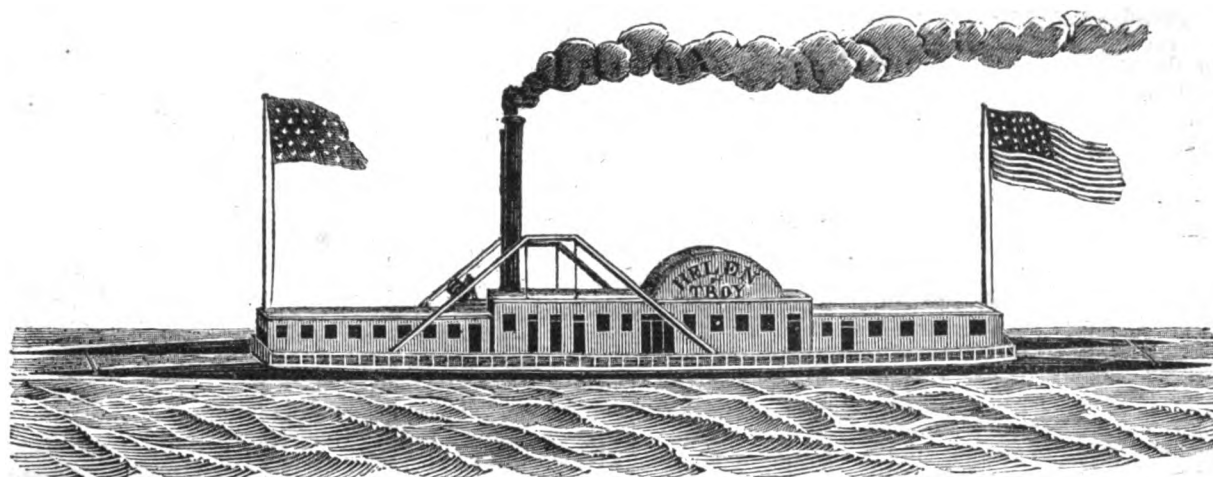
I am, Sir, with great respect, your very obedient servant,

R. BADNALL.

Douglas, March 27, 1834.

P. S.—S. Y. and I have, in one respect, misunderstood each other. He is certainly right in believing that the pressure upon an inclined plane, (alluding to the force necessary to draw a body up,) is as the base to the length: therefore, at an angle of 45°, my statement appeared erroneous; but, taking into consideration the resolution of the forces—that at an angle of 45° the length of the base is equal to the perpendicular elevation—and that taking the length of the plane as the entire force of gravity, it forms the diagonal to two equal sides of a square; the oblique forces are therefore equal—that is, at an angle of 45°, the force of gravity which urges a body down a plane, or retards its ascent, is exactly equal to the force of pressure on the

* Alluding to the trial of the undulating railway, which Drs. Dalton and Lardner have recommended to be instituted on the London and Birmingham line.



plane. For instance, if L be the length, B the base, and E the elevation, at an angle of 45° E is equal to B ; and although the pressure on the plane is $\frac{B}{L} \times L$, yet the tendency to descend is $\frac{E}{L} \times L$; the one force, therefore, is equal to the other. I close my discussion with S. Y. with every feeling of respect.

[See page 384.]

MACHINE FOR EXCAVATING EARTH.—Mr. G. V. Palmer, of Worcester, has been ten years and upwards engaged in constructing an extraordinary engine to excavate earth, &c. for which he has taken out a patent. This engine works by steam, and is particularly adapted for cutting canals, levelling hills for railways, and removing large masses of earth. The engine cuts, at a single blow, six feet in width and three feet in depth—delivering on either side, or into carts, one ton and upwards per minute: it also cuts and sifts gravel in the same proportion for road-making. We understand it is of great simplicity of construction, and the weight of the engine does not exceed three tons.—[Manchester Courier.]

We copy the following from the forthcoming number of the *Mechanics' Magazine*:

BURDEN'S BOAT.—This "wonder of the age" made its second trial on Wednesday last, June 10th. We have all along expressed our conviction that Mr. Burden has stated nothing that he will not accomplish; we think so still, and so does every practical man we have conversed with on the subject. But we do hope, that Mr. B. will not allow his anxiety to realize his promises interfere with his judgment, or in any way prevent his doing that which he has promised to accomplish, WELL. We insert the annexed engraving as a correct representation of it, and take this opportunity of introducing to the notice of our readers a condensed account of steam engines and their inventors, compiled from authentic sources. In a few days she will make her first trip to Troy.—[ED. MECH. MAG.]

The Great American Steam-Raft of English Origin. By ALFRED CANNING. [From the *London Mechanics' Magazine*.]

SIR,—Having noticed in your Magazine for Saturday, 22d ult., an account of a raft propelled by steam, considered to be the invention of a Mr. Burden, in America, I think it due to myself to state, that in 1817 I conceived the idea of constructing a raft

similar to that attributed to Mr. Burden, with this difference, that the bows of my floaters were to be considerably more elevated than those of Mr. Burden's raft. The following year, being in Paris, and foreseeing the probability of being detained there for a considerable time, I set about constructing my raft. I took two deal planks, of 30 feet long each, 12 inches wide by 6 inches thick, and having fashioned each like a canoe, I placed them on edge, parallel with each other, about 5 feet asunder, and connected them together at about 3 feet from the surface of the water, by a decking resting upon 4 stanchions, of about 7 feet long, which rose nearly 4 feet above the deck, and served to support a handrail, as well as to maintain in square the whole frame-work, by diagonal ropes, which passed through holes in the tops of the stanchions and holes in the deck. I tried this little model raft, both with oars, a sail, and paddle wheels (worked by the feet), and found that I was not deceived in my expectations of its speed, which was astonishing. I had a rudder of sheet iron, in the shape of a fish tail, adapted to each side-piece or floater, which were connected together and acted upon by diagonal cords and a cross-bar. Prince Joseph de Chimay, his sons, and several other persons of high rank, witnessed my trials. Finding it succeeded so well, and possess so many advantages over every description of boat, as it was not liable to sink or upset, &c. &c. I determined to construct a much larger raft, and propel it by steam; but owing to the jealous spirit of the boat owners on the Seine, particularly Prosper-Colin, and Dagnet, who had great influence with the Prefect, I was not able to procure a permission to place it upon the river. Being immediately afterwards obliged to absent myself from Paris upon urgent business, I left my model raft afloat, in the care of a waterman, who lived in his barge upon the Seine, at the foot of the Pont Royal, directly under the windows of the royal palace of the Tuilleries, one of the greatest thoroughfares in Paris, where it remained for five months. Upon my return, the waterman (Laporte) informed me that several foreigners, particularly Americans, had made repeated inquiries respecting the nature of the raft, and that two American gentlemen had made drawings of the raft; and had observed, "that rafts constructed upon the same principle would suit well the lake navigation in the United States."

Should you, Sir, or any of your readers, feel desirous of seeing a sketch of my sail

or steam raft, and further particulars respecting that, and four others which I constructed subsequently, having varied the dimensions of the floaters, and the substance of which they were composed, I will furnish them with pleasure. I remain, sir, your most obedient servant,

ALFRED CANNING.

Crown Coffee-House, Holborn, March 18, 1834.

[We shall be glad to hear again from Mr. Canning on the subject, with drawings, not only of his original model, but of his more matured plans of construction, and all illustrative particulars.—ED.]

NOTE.—Since the article in our present number, on the great American steam-raft was in type, we have received a letter from an esteemed correspondent, from which the following is an extract: "The velocity attained was in still water. The vessel draws only 7 inches water. They expect, with another that is completing, to perform twenty-seven miles an hour."

Account of Steam Engines and their Inventors.

[Compiled from authentic sources.]

The elegant toys of Hero, the beautiful experiments of Porta and Decaus, the modifications of the Greek machine by the unknown Italian, the practical merit of the "water-commanding engine," the ingenious ideas of Hautefeuille, and their masterly extension and developement by Papin, contain all the rudiments required for a perfect machine, waiting only to be touched by the wand of some mechanical magician, to form a structure of surpassing ingenuity and semi-omnipotent power.

The total neglect with which these individual schemes were regarded is not the least extraordinary circumstance in the history of the steam engine, and, above all, the oblivion which followed that of Lord Worcester, whose unconquerable perseverance, at the lowest ebb of his fortune, found means to carry his splendid ideas into practice. It appears improbable, but that his mechanism, whatever it was, was forced upon the attention of many parties connected with the draining of mines; and from the character of the Marquess, it is equally remote from belief that he would fetter the introduction of his invention into general use, by a high price asked for his permission to use it. The utter novelty of the nature and power of the agent, an ignorant and absurd idea of its danger, and the total want, probably, of any mechanical means, except that of mere strength of parts to guard against accidents,

may have been the real causes of its neglect, and exclusion from practice.

Thirty years after Lord Worcester's death, a brilliant ray of improvement suddenly bursts into the history of the steam-engine, from the consummation of the labors of a Captain Thomas Savery, who had been silently employed in combining a mechanism, in which elastic vapor was the motive power.

Of the history of this distinguished man little is known. * * *

He is first presented to our observation as an author of a scheme for rowing ships in a calm, for which, after obtaining a patent, he in vain endeavored to procure the patronage of Government. "The trial of my scheme was unjustly thwarted by one man's humor," said Savery. "A regard to my duty, as well as place, will not permit me to give a biased opinion," said the umpire. "But I have tried it," replied the projector, "on a small scale, and it answered completely." "So have we," said the servants of Government, "and in our trial it failed completely."

Savery afterwards remarked: "I was necessitated to write my book; for after I had racked my brains to find out that which a great many have spent several years in vain in the pursuit of, when I had brought it to a draught on paper, and found it approved by those commonly reputed ingenious, and receiving applause, with promises of great reward from court, if the thing would answer the end for which I proposed it; after I had, with great charge and several experiments, brought it to do beyond what I ever promised or expected myself, at last one man's humor, and more than a humor, totally obstructed the use of my engine, to my no small loss; but it is the nature of some people to decry all inventions, how serviceable soever to the public, that are not the product of their own brains."

He gave an account of it to secretary Trenchard. "A few days after, the secretary told me that the king had seen my proposals, and that I need not fear, for that the king had promised me a very considerable reward, and that I must go to the lords of the admiralty to put it in practice; but that first I must make a model of it in a wherry, which I did, and found it to answer my expectations. Then I showed a draft of it to the lords of the admiralty, who all seemed to like it, and one amongst them was pleased to say that it was the best proposal of the kind he ever saw; so I was referred from them to the commissioners of the navy, who all seemed to like it, but told me that the model must be surveyed by Mr. D—, the surveyor of the navy, whose opinion I asked; but he was very reserved, and said, 'that a wherry was too small a thing to show it in, there being no working at a capstan in a wherry;' but he told me 'it was a thing of moment, and required some time to consider on; for should I,' said he, 'give a rash judgment against it, I should injure you; or for it, the charge of putting it in practice must prove a loss to the king, and endanger my employ.'"

After four months' consideration, Dummer gave his opinion against Savery. It was neither a new nor a practicable invention, being similar to one used at Chatham, in 1682, which was abandoned, and he designated, though rather disingenuously, the capstan and its trundle as "*clock-work*;" and although Savery "exhibited his wherry on the Thames, and thousands of people were

eye-witnesses, and all people seemed to like it, the public newspapers speaking very largely of it, yet all to no purpose." (p. 18.) The inexorable lords of the admiralty were "so much altered that, from commending the thing, they would not hear one word in its defence." (p. 15.) Savery, notwithstanding, "being informed by Sir Martin Beckman, the greatest engineer in the Christian world, that the thing was good, got a noble lord to show a draft of it to the king a second time, who ordered me," says Savery, "again to the admiralty, who never ordered me in before them, but, after waiting two or three days, the doorkeeper told me that my business lay before the navy. Upon which, next day, I desired a friend of mine to go with me to the navy office, that he, being a man of extraordinary judgment, and no less reputation, might be an evidence to what discourse might happen; but coming to the navy office, we found the board was rose. However, in the hall I found Mr. D—; I asked him whether any thing was come before the board concerning my business. 'No,' said he, 'not since the objections sent to the lords of the admiralty;' on which he could not but fall into an argument. I asked him some questions in relation to his objections, and in a very little time we had a great pother about superambient air and water. I found that my sailor ran himself fast aground, as men commonly do when out of their knowledge; this, indeed, made me pity him again, although I was willing to come at the plain truth of the matter, and asked him whether or no he could not bring one hundred and fifty men to work at this engine, he answered yes; then, said I, will they not have as much power to give a ship motion as one hundred and fifty men would have on shore, at a hawser fastened to the ship; this he likewise answered in the affirmative. Then, said I, it will do more than oars, or any thing but a gale of wind, and fully answer my proposals. Well, said he, with a smile, and putting off his hat as taking leave, 'We are all submission to the lords of the admiralty.'

"Not long after, a friend of mine met a commissioner of the navy, and my friend, being perfectly acquainted with my contrivance, asked the commissioner why it was not put in use by them? The gentleman offered several objections, which were, by sound reason, fully answered by my friend, that he had only this hole to creep out at. 'Sir,' said he, 'have we not a parcel of ingenious gentlemen at the board?' 'Yes,' said my friend, 'I hope so, or five hundred pounds per annum is paid them to a fine purpose.' 'Is not Mr. D—,' said the commissioner, 'one of them, and an ingenious man?' 'I hope so,' continued my friend. 'Then,' said he, 'what have interloping people, that have no concern with us, to pretend to contrive or invent any thing for us?'"

Savery, whose bluntness, probably, was no recommendation to his application, has several flings at the "boards," and his statement is wound up by a dexterous one at the contents of courtly Dummer's wig. "Whoever is angry with truth for appearing in mean language, may as well be angry with a wise and honest man for his plain habit; for, indeed, it is as common for lies and nonsense to be disguised by a jingle of words, as a blockhead to be hid by abundance of peruke."—[Navigation Improved, p. 33.]

In the pamphlet in which Savery appeals from their judgment to that of the public, he pays less attention to the reasons urged against its novelty, as well as practicability, than they were fairly entitled to receive.* In his resentment he says, that "not a tittle will he disclose of two other inventions of his until he has justice done him on account of his rowing engine." The first of these was "a gin of fourteen inches square, portable by one man, and by which one man may lift the largest cannon into her carriage." The second contrivance was a method whereby he could fight any ship, "using charge and discharge as often as six do now, and to as much purpose, without any manner of incommodation, more than by the common way, so that one half of the men need not be exposed that now are, and the rest may be kept as a reserve for boarding; the benefit of this I leave to the ingenious sailor."†

The enthusiasm of the projector was softened in Captain Savery by the experience of a practical mechanic; and he early appears to have acquired that personal consideration which usually follows a man of genius and enterprise, when his habits are those of a man of business.

At the first announcement of his machine for raising water, he had so matured his ideas, and was so well versed in the nature and power of the motive agent, that his masterly combination has left but minor objects for improvement to succeeding engineers. His mode also of introducing his invention to the notice of the public was totally different from that which had been followed by former projectors. They enveloped every thing in mystery, and endeavored to attract attention by exaggerated statements of power or economy. His first step was to explain to every one the principles, as well as construction, of his apparatus: he showed why

* *Navigation Improved*, or the art of rowing ships of all rates, in calms, with a more easy, swift, and steady motion than oars can, by *Tho. Savery*, gent. London, 1698. In 1693 a M. Duquet made several experiments at Marseilles, at the expense of the King of France, to navigate a vessel by revolving paddles, or wheels, instead of oars. The results of these trials were very satisfactory, and strongly directed the attention of philosophers, as well as mechanics, to the practicability of this application of water-wheels.—[Machines Approuvees, tome i. p. 173.]

† Sir Isaac Newton, in a report (dated Leicesterfield, January 27, 1718,) which he made to the government, on the practicability of an invention for measuring a ship's way at sea, mentions Savery as the inventor of this machine, and notices another of his contrivances. "Mr. Savery, who invented the raising of water by fire, told me about six years ago, that he had invented an instrument to measure the distance sailed, and by his description that instrument was much like this, (the one submitted for his opinion,) the sea water driving round the lowest and swiftest wheel thereof, and that wheel driving round other wheels, the highest and lowest of which turn about an index to show the length of the way sailed."

Savery complained of one of his inventions being neglected, from its resembling a mechanism with which he was unacquainted; but Savery's one, which is now mentioned, was itself only a copy from another described by Bourne, in his inventions as produced by a Humphrey Cole. De Saumarez complains, in his turn, of Savery's scheme being remembered by Sir Isaac only to get rid of his claim. The picture he draws of his pursuits and projects is an excellent likeness of a large but harmless class—can it be named?—of *simple schemers*.

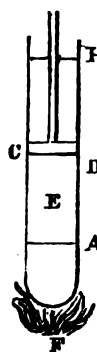
"He was the son of De Saumarez, chaplain to Charles II.; although he was bred in Holland to learn commerce, he never applied himself to any trade or profession, but in an easy and quiet enjoyment of his small estate, in the island of Guernsey, he took his diversion in the experimental part of mathematics, his genius or inclination being that way for machines and inventions, wherein he spent about 22 years last past, confining himself to a retired sort of life, within his little laboratory; and of late he fixed his projects upon a particular invention, towards the improvement of navigation, which he could not bring forth to effect in the island, for want of able workmen; but he came to London on purpose, and he hath actually begun, and hopes, with the blessing of God, to bring it to some perfection."—[Memorial, p. 4.]

it was a cheaper power than that of horses or men; and he invited practical men to judge for themselves of the value of his assertions and statements, by an inspection of the machine itself in operation.

The influence of the court was at this period considered to be essential to the success of any speculation which required the aid of a monopoly. The profits might be diminished or overthrown by the obstacles which avarice and intrigue could then interpose in that quarter to its further progress; and from this circumstance, considerable importance was attached to having the countenance of those in power to any project in which the pecuniary risk required to be extensive; and Captain Savery might be said to be conforming to an almost common practice, when he exhibited a working model of his fire engine before King William, at Hampton court. That monarch, who himself had a mechanical turn, was so pleased with its ingenious construction and effective action, that he took a warm interest in its success, and permitted its author to inscribe to him the account which he published of his contrivance, under the title of "The Miner's Friend."

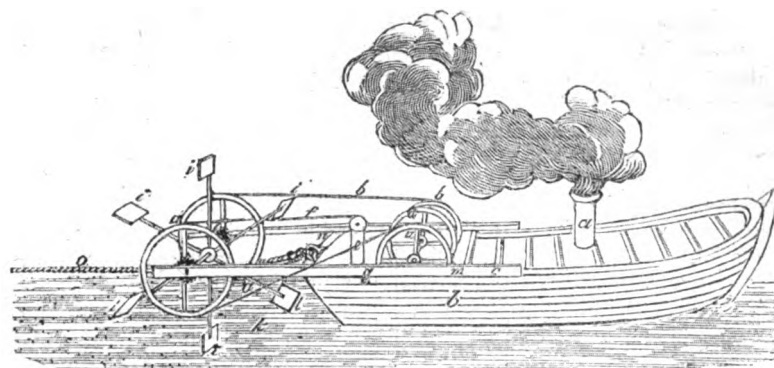
The great fame of the Royal Society, then adorned by the presidency of Sir Isaac Newton, made its opinion to be listened to with profound respect in matters of science and mechanics. To that body also Captain Savery carried his invention; and in their transactions for that year is a record of his successful experiment, made in their apartment, and a view and description of the machine forms the subject of an engraving in their annual volume.

For more perfectly illustrating the mode in which steam operates, we will suppose the vessel, represented in the following figure, to be filled with water up to the line A, and the



space E occupied with air, and having a plug or piston fitting it at C, and an aperture at D; now, if the aperture D be closed, and heat applied to the water, as at F, steam will be generated, and by its expansive force will raise the piston C upwards; then, if the heat be withdrawn, and the vessel suddenly cooled, condensation will take place, the steam, re-assuming the form of water, will again occupy the space below the line A, and the piston C will return to its place. In this experiment the expansive force of the steam compressed the air in the space E, and forced the plug C upwards, we will suppose, to H; but C, in travelling to H, displaced so much of the atmosphere as occupied the tube from C to H; consequently, the portion so displaced will seek to resume its natural position, and when the force of the steam is withdrawn by condensation, the weight of that portion of the atmosphere will again return the plug C to its place; by which it is obvious that the raising of the plug was the direct action of the steam, and the returning its consequent action, or the action of the atmosphere, in consequence of its having been displaced by the force of the steam.

Again, if we suppose the plug to be in its first situation, as at C, and we open the aperture at D, and apply heat, the steam will rise into the space E, and expel the air through the aperture D, which being closed, and condensation caused, the space E will



be left a vacuum, and the atmosphere seeking to occupy that space will force the plug C down to the line A; here the movement of the plug C was solely caused by the atmosphere exerting itself to regain the position whence it had been expelled by the force of the steam through D, and this effect is performed by the consequent power of steam alone.

It has been found by experiments, that the pressure of the atmosphere is equal to about 14 pounds weight upon every square inch, so that supposing the superficies of the aperture of the vessel, to contain one square inch, the power exerted by the steam in raising C to H will be tantamount to raising 14 pounds weight that height, together with the power necessary to overcome the friction and weight of the piston C, in the cylinder; and that the power exerted by the steam in expelling the atmosphere from the space E, and obtaining its consequent pressure to the raising of 14 pounds from A to C; and that the disposable power, obtained by the return of the piston from H, will, in the first instance, be equal to the raising of 14 pounds weight from C to H, less the amount of the friction of the piston C; and, in the second, will be equal to the raising of 14 pounds weight from C to A, less the amount of the friction as before. In both these instances the expansive or direct force of the steam has only been considered as equal to the displacing of the atmosphere, or what will be equal to 14 pounds pressure on each superficial inch; but if the piston C be loaded with any weight, the steam will, if urged with sufficient heat, raise it, always premising that the vessel is strong enough to resist the increased pressure. Suppose C to be loaded with 10 pounds of weight, the steam must be urged until its pressure is equal to 24 pounds, 10 pounds more, 14 pounds the pressure of the atmosphere on each square inch, and the resulting disposable force will be equal to 24 pounds more, the weight of C, less its friction returning to the place from where C was raised; so that, in this case, the pressure on the internal sides of the vessel, tending to burst it, will be equal to 10 pounds per square inch of the internal superficies, the remaining 14 pounds being counteracted by the pressure of the atmosphere on the external surface, which is equal to 14 pounds of the internal pressure. By this, it is evident that the direct force of steam may be increased without limits, whereas the resulting force or pressure of the atmosphere is manifestly bounded to 14 or 15 pounds on the square inch, according as its density varies.

A mode of applying the power of a steam-engine to navigate a vessel was suggested by Jonathan Hulls in 1737.* But the scheme,

although a nearer approach to the present form of the steamboat, can neither be considered as the first suggestion for moving wheels by steam, nor any improvement on the idea which emanated from another—nor even any specimen of mechanical skill, for it is awkward, clumsy, and inartificial; but, as his claims have been put forth to a higher place than is here assigned him, they will be better understood by a reference to the engraving, (see following page,) and the description of it, which follows nearly in his own words. It is doubtful whether Hulls ever proceeded beyond printing a description of his project.

"a, chimney coming from the furnace; b, tow-boat; c, c, two pieces of timber framed together to carry the machine, d; x, y, z, three wheels on one axis to receive ropes, s, t, u; t, being rope that goes into cylinder; m, n, two wheels on same axis with the fans, i, i, i; u, is a rope going from wheel, n, to z; that, when the wheels, x, y, z, move forward, moves wheel, n, forward, and the fans along with it; s, a rope going from wheel, m, to the wheel x, so that when the wheels, x, y, z, move forward, the wheel, m, draws the rope, s, and raises the weight, g, at the same time as the wheel, n, brings the fans forward.

"When the weight, g, is so raised, while the wheels, x, y, z, are moving backward, the rope, s, gives way, and the power of the weight, g, brings the wheel, m, forward, and the fans with it, so that the fans always keep going forward, notwithstanding the wheels, x, y, z, move backwards and forwards as the piston moves up and down in the cylinder: o, e, teeth for a catch to drop in from the axis, and are so contrived that they catch in an alternate manner, to cause the fans to move always forward; for the wheel, m, by the power of the weight, g, is performing its office while the other wheel, n, goes back, in order to fetch another stroke. The weight, g, must contain but half the weight of the pillar of air pressing on the piston, because the weight is raised at the same time as the wheel, n, performs its office; so that it is, in effect, two machines acting alternately by the weight of one pillar; of such a diameter as the diameter of the cylinder is." Hulls, aware that objections might be urged against its want of originality, endeavors to anticipate them: "if it should be said," says he, "that this is not a new invention, because I make use of the same power to drive my machine that others have made use of to drive theirs for other purposes, I answer, the application

* A description and draught of a new-invented machine for carrying vessels or ships out of or into any harbor, port, or river, against wind or tide; or in a calm. London, 1737. It is a pamphlet, by no means scarce, containing forty-eight pages, about eight of which have any reference to his invention. Hulls took out a patent.

of this power is no more than the application of any common and known instrument used in mechanism for new invented purposes."

It may, however, be observed, that he considers that it would not be practicable to place his apparatus on board of the ship which it is required should be moved—but that a separate vessel should be appropriated to its reception, and that this should be used as a tow-vessel; and he urges several economical reasons in favor of his *Tow-Boat*. The manner of converting the rectilinear motion of his piston into a rotary one, is very ingenious.*

Next in order we must place the experiments of the immortal James Watt.

From results, he saw that, in order to make the best use of steam, it was necessary that the *cylinder should always be as hot as the steam which entered it*. And also, that all the water that was formed by the condensed steam, and the injection-water likewise, should be cooled down to 100 degrees, or lower, where that was possible.

In looking to what had been done, or suggested by others, he had little to guide him in this inquiry. A rude help to his ingenuity might have been derived from some of the most common experiments with the air-pump; but at the moment when his sagacity had pointed out the direction of the path, his imagination did not enable him to follow it.

He had yielded to the difficulty, when, early in 1765, "in one of those moments when the heavenly spark of genius shone with brightness in his mind, the idea broke in upon him," that if a *communication were opened between a cylinder containing steam and another vessel which was exhausted of air, the steam would immediately rush into the empty vessel, and if that were kept very cool, by an injection or otherwise, the steam would continue to enter until the whole was condensed. And if an air-tight cover were placed on the cylinder, steam might be admitted to depress the piston in a vacuum instead of the atmosphere.* ADMIRABLE INVENTION!

When once the idea of separate condensation was started, minor improvements followed in quick succession. He imagined that the orifice for the piston-rod could be kept air-tight by means of a stuffing-box; and as it was obvious water could not be introduced to make the piston steam-tight, for if any of it found its way into a hot cylinder it would be converted into vapor, (as in some of his experiments,) he should employ wax and tallow as lubricating substances. He also thought that, by surrounding his cylinder with a casing of some substance which would prevent its heat from being abstracted by the circumbient air, and the air which was disengaged from the water, or found its way into the cylinder, he could extract by a pump, and by the same means he might employ the condensing vessel of the water which was produced by the injection and the condensation of the steam, or he would allow it to fall through a pipe thirty-four feet long into a pump or well, as practised by Newcomen and others. Thus, step by step, in the course of one or two days, in the eye of his mind, the exquisite conception was complete.

"About the time that Mr. Watt was en-

* About this period three fire-engines were in operation in France, one at Freane, near Conde; one at a coal mine at Sars, near Charleroi; a third at a lead mine near Namur.—[Gensanne, p. 300, vol. ii. *Machines Approuvees*.]

gaged in bringing forward the improvement of the engine, it occurred to Mr. Gainsborough, the pastor of a dissenting congregation at Henley-upon-Thames, and brother to the painter of that name, that it would be a great improvement to condense the steam in a vessel distinct from the cylinder, where the vacuum was formed, and he undertook a set of experiments to apply the principle he had established, which he did by placing a small vessel by the side of the cylinder, which was to receive just so much steam from the boiler as would discharge the air and condensing water, in the same manner as was the practice from the cylinder itself, in the Newcomenian method—that is, by the snifting valve and sinking pipe. In this manner he used no more steam than was just necessary for that particular purpose, which, at the instant of discharging, was entirely uncommunicated with the main cylinder, so that the cylinder was kept constantly as hot as the steam could make it. Whether he closed the cylinder as Mr. Watt does, is uncertain; but his model succeeded so well, as to induce some of the Cornish adventurers to send their engineers to examine it; and their report was so favorable as to induce an intention of adopting it. This, however, was soon after Mr. Watt had his act of parliament passed for the extension of his term; and he had about the same time made proposals to the Cornish gentlemen to send his engine into that country. This necessarily brought on a competition, in which Mr. Watt succeeded; but it was asserted by Mr. Gainsborough, that the mode of condensing out of the cylinder was communicated to Mr. Watt by the officious folly of an acquaintance, who was fully informed of what Mr. Gainsborough had in hand. This circumstance, as here related, receives some confirmation by a declaration of Mr. Gainsborough, the painter, to Mr. T. More, late secretary to the Society for the Encouragement of the Arts, who gave the writer of this article the information; and it is well known that Mr. Gainsborough opposed the petition to parliament through the interest of General Conway." [Hornblower, in Gregory's *Mechanics*, p. 362, vol. ii., first edition.]—On this statement, a writer in the *Edinburgh Review* observes, "We believe and hope, for the sake of the memory of a very respectable man, that the conversation is not accurately represented. It remains upon record that Mr. T. More was examined as a witness on the trial of a cause of Bolton vs. Bull, in 1792, at which time Mr. Hornblower himself was also examined as a witness, but on the opposite side from Mr. More. Mr. M., on this occasion, was asked, whether he had read the specification of Mr. Watt's invention, and whether, in his opinion, it contained a disclosure of the principles of the steam-engine? To this question he answered, 'I am fully of opinion that it contains the principles entirely, clearly, and demonstratively.' He was then asked, 'Did you ever meet with the application of these principles before you knew of Mr. Watt's engine?' His answer was, 'I do declare I never saw the principles laid down in Mr. Watt's specification, either applied to the steam-engine previous to his taking it up, or ever read of any such thing whatever.' It is not easy to reconcile these two answers given by that gentleman on his oath, with the words that Mr. Hornblower has put into his mouth. Mr. Gainsborough's idea, whatever it was, was posterior by more than twenty years." (1)

[P. 328, vol. xiii.]—We know not if the claim which is put forth in the above extract is the same as that alluded to by the late venerable Professor Jardine. "I happened," says he, "to be tutor to Dr. Roebuck's sons at that time (when Watt was at Kinneil); I had then the pleasure of seeing the experiments on a great scale, which were carrying on. This accidental circumstance, and this opportunity, connected me so much with what was going on, that when they were completed I was asked by Mr. Watt to go with him to Berwick, when he went to give in a specification of his invention before a Master in Chancery, previous to the obtaining of a patent. And many years afterwards, when a groundless and frivolous charge was brought against Mr. Watt, by a person who claimed a share in the invention, I was called to give evidence of what I knew of this in Chancery. It is needless to add, Mr. Watt was triumphantly victorious."

The failure of both Fitch and Rumsey to carry their schemes into practice, as it had previously done in another, settled the dispute as to priority of invention in America.

Oliver Evans, about the same period, had been maturing a plan for using steam of an elasticity ten times greater than that employed in the condensing and atmospheric engines. And his proposal was further remarkable, as embracing a device to propel waggons on common roads, by a steam-engine instead of horses. "But all united," says he, "in condemning the scheme, except two gentlemen, (one of whom was a projector himself,) and indeed one, who has the name of a celebrated engineer, continued to oppose them for a long time after they were fully in operation."

One of his adversaries was a Mr. Latrobe, who uniformly opposed steamboat projects, as well as those for steam carriages. Fifteen years after this period, and three years before they were finally established, (unfortunately for his reputation,) he printed a report against their practicability. We quote it as containing some facts respecting steam navigation. "After the American Revolution, a sort of mania began to prevail, which, indeed, has not yet entirely subsided, for impelling boats by steam-engines. Dr. Franklin proposed to force forward the boat by the immediate action of the steam upon the water. Many attempts to simplify the working of the engine, and more to employ a means of dispensing with the beam in converting the libratory into a rotary motion were made. For a short time a passage-boat, rowed by a steam-engine, was established between Bordentown and Philadelphia, but it was soon laid aside. The best and most powerful steam-engine which has been employed for this purpose, (excepting, perhaps, one constructed by Dr. Kinsey, with the performance of which I am not sufficiently acquainted,) belonged to a few gentlemen of New-York. It was made to act by way of experiment upon oars, upon paddles, and upon flutter wheels; nothing in the success of these experiments appeared to be sufficient compensation for the expense, and extreme inconvenience of the steam-engine in the vessel.

"There are, indeed, general objections to the use of the steam-engine for impelling boats, from which no particular mode of application can be free. These are—1st, The weight of the engine and the fuel; 2d, The large space it occupies; 3d, The tendency of its action to rack the vessel and render it

leaky; 4th, The expense of maintenance; 5th, The irregularity of its motion, and the motion of the water in the boiler and cistern, and of the fuel vessel in rough water; 6th, The difficulty arising from the liability of the paddles or oars to break, if light, and from the weight, if made strong. Nor have I ever heard of an instance verified by other testimony than that of the inventor, of a speedy and agreeable voyage having been performed in a steamboat of any construction."

In 1786, when Evans applied to the legislature of Pennsylvania, for an exclusive right to move land-carriages by steam, "they conceived me to be deranged," says he, "because I spoke of what they thought impossible, and they refused to grant the privilege I prayed for." The authorities of Maryland, to whom he next applied, with more wisdom than their neighbors, granted his petition, on the principle that what he asked for could injure no man, and might cause him to produce something useful." But with all his perseverance, his reputation for practical knowledge, and his privilege to boot, Evans could not persuade any person of substance to think so favorably of his steam-waggon, as to furnish him with the means to try one on a common road. And the drawings and descriptions of his scheme which he sent to England, to find a patron there, produced no better result.

The history of the result of another attempt to navigate by steam, which was made in Scotland, by Mr. Patrick Miller, of Dalswinton, has been lately given to the public by his son.* Mr. Miller, in 1787, had published a description and drawings of a triple vessel, moved with wheels, and gave a short account of the properties and advantages of the invention. "In the course of his explanations, he suggested that the power of a steam-engine may be applied to move the wheels so as to give them a quicker motion, and consequently to increase that of the ship. It may readily be believed, that this hint of his intention to apply the power of steam to the wheels of his double and triple vessels was not hastily thrown out. In the course of his various experiments on the comparative velocity of his vessels, with those propelled by sails, or by ordinary oars, which had given occasion to several interesting and animating contests for superiority, he had strongly felt the necessity of employing a higher force than that of the human arm, aided as it might be by the ordinary mechanical contrivances; and in this view, various suggestions were successively adopted, and in their turn laid aside. Thus, at one time, it occurred to him that the power of horses might be usefully employed; while, at another, the aid of wind itself seemed to furnish the means of counteracting its own direct and ordinary operation. But among all the possible varieties of force, that of steam presented itself to his mind, as at once the most potent, the most certain, and the most manageable."

"In Miller's family there was at this time, as tutor to his younger children, Mr. James Taylor, who had bestowed much attention on the steam-engine, and who was in the custom of assisting Miller in his experiments on naval architecture, and the sailing of boats.*

* A short narrative of facts relative to the invention and practice of steam-navigation, by the late Patrick Miller, Esq., of Dalswinton, drawn up by his eldest son."—(Edinburgh Philosophical Journal, 1834.)

One day, in the very heat of a keen and breathless contest, in which they were engaged with a boat on the Leith establishment, this individual called out to his patron, 'that they only wanted the assistance of a steam-engine to beat their opponents;' for the power of the wheels did not move the boat faster than five miles per hour. This was not lost on Miller, and it led to many discussions on the subject; and it was under very confident belief in its success, that the allusion was made to it in the book already mentioned.

"In making his first experiments, Miller deemed it advisable, in every point of view, to begin upon a small scale; yet a scale quite sufficient to determine the problem which it was his object to solve. He had constructed a very handsome double vessel, with wheels, to be used as a pleasure boat on his lake at Dalswinton, and in this little vessel he resolved to try the application of steam." On looking round for a practical engineer to execute the work, Taylor recommended a Mr. William Symington to his attention, whom he had known at school, and who had recently contrived a mode of applying the force of steam to wheel carriages; and he accompanied Miller to the house of a Mr. Gilbert Meason, in Edinburgh, to see the model. Pleased with this specimen of Symington's ingenuity, he employed him, in conjunction with his friend Taylor, to superintend the construction of a small steam-engine, to work a double or twin boat. And in the autumn of the same year, the engine, which had brass cylinders of four inches in diameter, was fixed in the pleasure-boat on Dalswinton Loch. "Nothing could be more gratifying or complete than the success of this first trial, and while for several weeks it continued to delight Miller and his numerous visitors, it afforded him the fullest assurance of the justness of his own anticipation, of the possibility of applying to the propulsion of his vessels the unlimitable power of steam. On the approach of winter, the apparatus was removed from the boat and placed as a sort of trophy in his library at Dalswinton, and is still preserved by his family as a monument of the earliest instance of actual navigation by steam" in Great Britain.

Symington, in the succeeding year, was again commissioned by his patron to try the experiment on a greater scale; a double vessel, sixty feet long, was to be fitted with an engine and revolving paddles, suited to the supposed exigencies of the case. The engine and machinery were constructed at Carron, and in the course of six months the vessel was ready to be put in motion. In December, 1789, it was taken into the Forth and Clyde Canal, and in the presence of a vast number of spectators, the machinery was put in motion. "This second trial promised to be every way as prosperous as the first. It happened, unluckily, however, that the revolving paddles had not been made of sufficient strength, and when they were brought

* Mr. Miller, at various periods of his life, had embarked in many great schemes of improvement, and, among others, had expended large sums in experiments on the improvement of artillery and naval architecture. It was in the course of his speculations and experiments on the latter subject, that he was led to think of devising some mode of constructing or propelling vessels in circumstances where the ordinary resources of the nautical art were insufficient or unavailing; among these, the construction of double and triple vessels, to be moved by wheels placed in proper situations, had occurred to him, as calculated to prove of essential service, and he accordingly built and equipped several vessels of this description.

into full action, several of the float-boards were carried away, and a very vexatious stop was, for that day, put to the voyage. The damage was repaired, and on the 25th of December the steamboat was again put in motion, and carried along the canal at the rate of seven miles an hour, without any untoward accident, although it appeared evident that the weight of the engine was an overburden for the vessel, (her planking being only three quarters of an inch thick,) and that under such a strain it would have been imprudent to venture to sea. The experiment, however, was again repeated on the two following days; and having thus satisfied himself of the practicability of his scheme, he gave orders for unshipping the apparatus, and laying it up in the storehouses of the Carron Company."

"It may naturally occasion surprise and disappointment," continues his son, "that I should have to terminate here this account of my father's experiments on steam navigation; that he did not follow up these prosperous and decisive trials of its efficacy, with the same spirit and perseverance, which had been so conspicuous in many other instances, must for ever be matter of regret to his family, as it was to himself in the latter years of his life." The fact, however, was, "that he had to complain of the enormous expense in which he had been involved; and I may be permitted to add," continues his son, "that by this time my father, in the prosecution of his various schemes of a purely public nature, and without the slightest chance or expectation of reimbursement, had expended upwards of thirty thousand pounds." And, being by this time ardently engaged in agricultural pursuits, his attention was more easily turned from the objects of his former speculations, than those acquainted with his character would have been prepared to anticipate.

"Be that as it may, it cannot be anticipated that in point of fact he had fully established the practicability of propelling vessels of any size, by means of wheels or revolving paddles, and of adapting to these the powers of the steam engine, although, in the subordinate details of execution, great room remained for minor improvements.

"Of my father's peculiar and undoubted merits as an inventor, I have," continues his son, with a pardonable partiality, "endeavored to give a fair and unvarnished account; and of the reality of that invention, as carried into actual practice in the years 1788 and 1789, no demonstration more unequivocal can be desired than that, with his few but most satisfactory experiments, the prosecution of this momentous discovery remained suspended for many years, in a state of inactivity and neglect, till, at a period comparatively recent, it was revived in America, and in this country, by persons who can be proved to have derived their first lights from the experiments at Dalswinton and at Carron. But I have felt no other desire than to record the facts immediately connected with my father's operations, and to establish the priority of his claims to the credit of having originated, and carried into practical execution, an improvement in the nautical art, by far the most important of which the present age has to boast; and the ultimate effects of which, on the future intercourse of mankind, the most sanguine imagination would attempt in vain to predict."

The narrative which Mr. Miller gave of

his father's attempt to construct a steamboat, and from which we have made some copious extracts, agrees with an account of the same experiments which was given in a sketch of navigation by steam, inserted in the Supplement to the Encyclopedia Britannica.

Symington, who appears to have been more sanguine than his first patron, of the practicability of navigating vessels by steam, nearly twelve years after his experiments at Dalswinton Loch, found an opportunity to bring his scheme under the notice of a nobleman, who was zealous to encourage projects which had for their object the improvement of inland navigation. Symington, who imagined that a boat moved by wheels could be introduced with great economy, as a substitute for horses, in towing boats on canals, succeeded in inducing Lord Dundas, of Kerse, to assist him to make an experiment, on a great scale, on the Forth and Clyde Canal, with machinery, resembling in its principle that of the Dalswinton model, but modified to suit the purpose which he had more immediately in contemplation.

The result of this application, and the character of his patron, may here be noticed with reference to Symington on another account, besides its connection with a history of his experiment. From an expression in Miller's narrative, that his father was discouraged from proceeding farther from a feeling of disgust at having been involved in unnecessary expenses, an inference might be drawn unfavorable to the memory of an ingenious and worthy man.

But Miller's complaint is, in truth, a very common one; and the estimates even of the most experienced mechanics will probably continue to differ widely from the final outlay, even although those artists have been experimenting on their own means.

"Mr. Miller," says Symington, in his narrative, "being very much engaged in improving his estate in Dumfriesshire, and I also employed in constructing large machinery, for the lead mines at Wanlockhead, the idea of carrying the experiments at that time any further was entirely given up, till meeting with the late Thomas Lord Dundas, of Kerse, who wished that I would construct a steamboat for dragging vessels on the Forth and Clyde Canal, instead of horses. Agreeably to his Lordship's request, a series of experiments, which cost nearly three thousand pounds, were set on foot in 1801, and ending in 1802, upon a larger scale (than those on Dalswinton Loch) and more improved plan, having a steam cylinder twenty-two inches diameter, and four feet stroke, which proved itself very much adapted for the intended purposes. Having previously made various experiments in March, 1802, on the Forth and Clyde Canal, Lord Dundas and several other gentlemen being on board, the steam packet took in tow two loaded vessels, each of seventy tons burden, and moved with great ease through the canal, a distance of nineteen and a half miles in six hours, although the whole time it blew a strong breeze right a-head of us, so much so, that no other vessels could move to windward in the canal that day but those we had in tow, which put beyond the possibility of a doubt the utility of the scheme in canals and rivers, and ultimately in open seas. Though in this state of forwardness, it was opposed by some narrow-minded proprietors of the canal, under a very mistaken idea that the undulation of the water, occasioned by the

motion of the wheel, would wash and injure its banks. In consequence, it was with great reluctance laid up in a creek of the canal, exposed for years to public view, where Henry Bell from Glasgow, who also frequently inspected the steamboat at Carron, in 1789, did also particularly examine this."

During the time that he was engaged in this experiment, Symington received a visit from a Mr. Fulton, "who," says he, "politely made himself known, and candidly told me he was lately from North America, and intended to return thither in a few months; but having heard of our steamboat operations, he could not think of leaving the country without first waiting upon me, in expectation of seeing the boat, and procuring such information regarding it as I might be pleased to communicate. He at the same time mentioned, however advantageous such an invention might be to Great Britain, it would certainly be more so to North America, on account of the many extensive navigable rivers in that country. And as timber of the first quality for building the vessels, as also for fuel to the engines, could be purchased there at a small expense, he was decidedly of opinion it could hardly fail, in a few years, to become very beneficial to trade in that part of the world; and that his carrying the plan to North America could not turn out otherwise than to my advantage, as if I were inclined to do it, both the making and superintending of such vessels would naturally fall upon me, provided my engagements with steamboats at home did not occupy so much of my time, as to prevent me from paying any attention to those which might afterwards be constructed abroad. In compliance with his earnest request, I caused the engine fire to be lighted up, and in a short time thereafter put the steamboat in motion, and carrying him four miles on the canal, returned to the place of starting, to the great astonishment of Fulton and several gentlemen, who at our request came on board. During the above trip, Fulton asked me, 'if I had any objections to his taking notes respecting the steamboat?' to which question, I said 'none;' and after putting several pointed questions respecting the general construction and effect of the machine, which I answered in a most explicit manner, he jotted down, particularly, every thing then described, with his own remarks upon the boat;" "but he seems," says Symington, "to have been altogether forgetful of this, as, notwithstanding his fair promises, I never heard any thing more of him till reading in a newspaper an account of his death."

From these facts, the author of the sketch thinks it is very evident Symington was the first person who had the merit of successfully applying the power of the steam engine to the propulsion of vessels, and that there can be but one opinion, that, in its influence on the fate of a most ingenious man, there existed not enterprise enough in Scotland to encourage this excellent artisan to repeat his interesting and important experiments on the river Clyde.

About the time Symington had abandoned his experiments, M. Des Blanc, a watchmaker at Trevoux, had built a steamboat, and made some experiments with it on the river Soane. The first attempts were so successful as to bring forth the Marquis de Jouffroi, with his prior claim; the final result, however, was as hapless as the Marquis's.

NEW-YORK AMERICAN.

JUNE 14—20, 1834.

LITERARY NOTICES.

LETTER XXXI.*

Lexington, Kentucky, April 6th.

It was a beautiful day, that on which I left Cincinnati; and when, after crossing the Ohio at noon, I found myself upon the Kentucky bank of the river, and checked my horse to look back for a moment upon the noble town and the fair stream that bathed its walls, I could not but admit that the amphitheatre of green hills opposite to me did really shut in "The Pride of the West," if not the most beautiful city in the Union. But I confess I was not sorry to escape from its elegant and profuse hospitalities, and to find myself once more on horseback and alone, free to rove wherever fancy or caprice should lead me.—The "voice of Spring" had long been abroad in the land, and the perfume of blossoms and flowers that met my senses as I rode by the scattered gardens in the little town of Covington, seemed to rebuke the taste which had kept me so long within a city's walls. From a green knoll on the edge of the village I took my last look of the beautiful Ohio, and then pausing vainly a moment to catch the words of a song which a young girl was warbling to her piano in a pretty cottage near, I struck down the side of a grassy slope, and crossing a brook, soon found myself riding through a tall wood on the high road to Lexington. The evening soon after closing in, left me but little opportunity of observing the country, which appeared to be generally heavily wooded, and broken up into undulations so short and frequent, as to make the office of ploughing the hill-sides no sinecure. The aspect of a broken country was so agreeable to me, however, after being so long upon the prairies, that I was not sorry to find but little alteration in the scenery, when I arose and advanced upon my journey the next morning. But for the present I was no longer solitary. I had not got a hundred yards from the house where I passed the night, before I heard a voice from an enclosure near the road, calling out, "Hallo, stranger; I reckon you and I are cutting out for the same place; so hold on a bit, and you shall have some company." But before this considerate traveller could gain the road, I was overtaken by a young man of genteel appearance, who at once drew up by my side and entered into easy conversation, according to the custom of the country. After riding a mile or two together, he asked me if I would eat an apple, and, upon expressing assent, instead of drawing the fruit from his pocket, or saddlebag, as I expected, I was not a little surprised to see him stop in front of a respectable looking house, and halloo till a half a dozen negroes made their appearance from the log cabins around the door. "I say, Aunty," cried my companion to an active looking wench, who advanced before the rest, "has your master got any apples in the house?" "Only a few barrels left, young master." "Well, then, bring us a dozen." A large basket containing as many of the finest pippins as we could stow about our persons, was, a moment after, brought to the road side and held up to us, as we sat on horseback; and, after dividing the contents between us, I was very naturally about to pay for them, but the young gentleman told me that I would only insult a decent farmer's family, (not a soul of whom was known to him,) by paying for what "no Kentuckian would be brute enough to refuse a stranger."

My companion soon after parted from me, and entering a deep wood, I was so much engaged in listening to the mellow whistle of the red-bird and marking the shrubs and flowers that were putting forth their virgin blossoms around me, that I insensibly deviated from the turnpike (so called) and took a road which after an hour's riding through a romantic forest, brought me up at last by a mill, where I learnt how many miles I had wandered from the way. The beautifully secluded dell through which my path now led in recovering the main road, left me nothing to regret in having thus added to my journey. It was watered by a deep brook, along whose steep banks the red-bud and the wild plum put forth their delicate blossoms in rich profusion, and the various singing birds, which the glare of noon had driven from the

* The publication of "A Winter in the West" having been determined upon, the four intervening letters, describing the city of St. Louis, the sail up the Ohio, and the various points of interest around Cincinnati, with a sketch of the society in that beautiful town, have been reserved for publication in a more compact form.

road side and open fields far into the forest, kept here the woods alive with music.

My path, at first but little more than an Indian trail, widened at last into something like a wagon road; and I came finally to a number of log cabins, scattered along the road at some distance from each other. Near one of one, I was not a little struck at seeing an old gray-headed negro ploughing the few acres which surrounded the miserable shantee, while a stout, hale looking fellow of forty was lounging indolently in his rude and dirty doorway. It was the first object I had seen to remind me unpleasantly that I was now in a slave State.

A pretty cottage, with some shrubbery around it, stood near the spot where I regained the highway toward sunset; and near at hand was a small grave yard, protected from the road by a slight fence, with a rank growth of weeds along its border. Pausing a moment to observe the various rude memorials to the dead that reared their gray heads in the yellow sunlight, my attention was fixed by a young fair-haired girl of sixteen, kneeling by the side of a new made grave, and bending her head toward the recent sod, apparently in an attitude of prayer. Upon looking more narrowly, however, I discovered that she was only engaged in planting flowers around a spot which was probably hallowed in her affections. Her bonnet was thrown back upon her shoulders; and there was nothing to screen her features from view except the long hair, which waved in locks of gold on either side of her pensive countenance, which—so intently was she bent upon her graceful task—was only completely exposed when she raised her head, as if startled by the sound of my horse's hoofs, as I moved from the spot.

The evening had completely settled in upon the lower grounds as I looked from an eminence down into the little valley whence rose the white chimnies of the house where I was to pass the night. It stood in straggling and broken form, one story in height, on the margin of a lively brook, which rattled along the base of the hill; the various buildings comprehended in the mansion making quite an imposing appearance as they extended their low and irregular front along the road side. There was a fence of rough slabs, whitewashed, about ten feet in front of the porch, with a number of different lengths placed upright near it, to answer the double purpose of a horse block to mount from and a style to cross the fence with. A limping gray-headed negro received my horse at the door, while the landlord took my saddle-bags, and ushered me into a wainscotted and white-washed chamber, where another traveler, who had arrived but a few minutes before me, was comforting himself with the contents of a pitcher of cider, which stood at his elbow. "Come, sir, come," he exclaimed, upon my entrance—"Come, sir, take a drink; this cider goes very well after an evening ride." "Help yourself, stranger," added the landlord, "while I tote you plunder into the other room." Then, while I joined the cider drinker in his thin potatoes, the landlord soon returned, and finding that my immediate destination was Lexington, he told me, with an air of great satisfaction, that "I would have company all the way, for that that gentleman was going on in the morning." The other, a plain farmer, with whom I had now exchanged some common-places about agriculture, which nearly exhausted my stock of information on that subject, rejoined with animation that he was very glad I was going his way, as "he allowed the gentleman to be right good company, and he did not mistrust but what we'd have a tip-top time of it."

The faintest streakings of dawn were hardly perceptible in the east when our horses were brought to the door the next morning; and mounting by the light of the young moon, which showed like a mere gash in the blue vesture of heaven, we moved in a brisk trot from the door of the hostelry. The twilight seemed to be losing its sombreness as we gained the top of the opposite hill; and then entering a wood of ancient beeches, the chirp of the grey squirrel, and the grating call of the ma-ma-twa, or cat-bird, impatient to commence his morning song, rivalling in sweetness the finest music of the woods, foretold the approach of day; and, indeed, the sun was already up, and the wild bee humming around the blossoms of a majestic tulip tree, as we emerged from the forest beneath its gnarled branches that extended across the road, and framed in a miniature view of cultivated country below us, whose aspect beneath the uprising sun was perfectly delicious. "Save your praises, stranger, until you get twenty miles nearer to Lexington," cried my companion, as I gave loose to my admiration and delight in no measured terms. The scenery of this part of Kentucky reminded me much of that in the eastern section of

Putnam county in the State of New York. There were the same abrupt hills, cultivated apparently to the utmost, wherever their inclination was not too great for the plough, and having all their steep places covered with a vigorous growth of forest trees, while at every interval between their bases some saucy brook would make its presence known as it capered along over the stones that paved its path to some more majestic and tranquil stream.

It was high noon when I approached the environs of Georgetown, and looked down from an eminence on the banks of the Elkhorn—a pretty winding stream about fifty yards wide—upon its beautiful race-course. It was an immense meadow of the finest and firmest turf, studded here and there with noble elms and sycamores the original growth of the forest and having two sides bounded by the river, while thickly inclosed grounds, scattered copses, or sunny slopes, waving with new wheat, gave repose to the eye upon the remaining two. The town itself looked very flourishing, and appeared to be well built, chiefly of brick; but wishing to reach Lexington early in the evening, I rode directly through it.

The country now became much more level, and the soil richer than any I had seen since crossing the Ohio. The inclosures, too, were all in better order, and I now, for the first time, saw some of those beautiful wooded pastures, which, as they are the pride of Kentucky, are peculiar, I believe, to this State. An occasional villa, embosomed in trees and shrubbery, was soon after observable. The distance at which they stood from the road indicating the taste of their proprietors in one essential point, while it left one to guess how it had displayed itself in others. The frequency of these tasteful residences continued increasing, until the collection at last assumed the appearance of a village, and finally, after travelling a few hundred yards on a M'Adamized road, I found myself riding over paved streets through the beautiful town of Lexington, the various gardens and shrubbery around the doors of the houses leading one so insensible into the business parts of the town, that you are in the heart of the place before becoming aware that you have passed the suburbs. The town, which is regularly laid out upon a level plot of ground, is well built of brick and wood, and has the sidewalks of its broad streets almost invariably lined with ornamental trees; so that, with the numerous vacant lots cultivated as gardens, and in which even thus early, the song of the mocking-bird may be heard, Lexington approaches nearer to the *rus in urbe* than any town of its size that I have seen.

Soon after entering the town, my fellow traveller drew up his horse by my side, and mentioning that "we must part here, perhaps never to meet again, stranger," he, for the first time, enquired my address with some interest, and took a very kind farewell of me. He was a plain and unpretending man, in very moderate circumstances, and spoke upon few other subjects besides religion, slavery, and the state of agriculture in Kentucky; but the attention with which I listened to the exposition of his views, while studying him as a fair representative of one of the most important classes in the community, seemed sufficiently to have won his good opinion; and I must say, that if the farmers of Kentucky are generally gifted with the same conscientiousness and moderation, with equal liberality and desire for improvement, they will compare to advantage with the cultivators of the soil in any part of the Union. Nor have I as yet, since crossing the Ohio, met with any of those "half-horse and half-alligator" characters, which flourishing for a few years on the banks of the Mississippi, have now for the most part withdrawn themselves beyond the frontiers, or live chiefly in the imagination of those who confound the wild boatmen of the western waters with the far different people who dwell upon their borders.

I am now established for a few days at Postlethwaite's Hotel in the centre of the city of Lexington, and will give you, in my next, the result of various excursions which I meditate in the neighborhood.

THE EARTHQUAKE IN SOUTH AMERICA.—A newspaper, brought by the Orbit, Captain Moncrieff, from Jamaica, contains some additional particulars of this dreadful calamity.

PASTO, 22d Feb. 1834.—I have to inform you that the town of Santiago, adjoining the parish of Sibundoi, situated to the east, and at the distance of 12 or 14 leagues, was built over a hidden volcano, which burst on the 29th ult. at 7 o'clock in the morning. The

earth shook so violently, that that alone ruined the ancient Rio Bamba, which may afford you some means of drawing a comparison. A run of land about 3 leagues long and 2 broad, sunk, with the forest which covered it; and its superficies presents now the aspect of a savanna, covered with stones and sand. Although the trees which covered the spot were as old as the world, there has not a root of them remained, nor even a leaf to indicate the place where they stood.

During 24 hours that the earth shook without ceasing for one instant, the town and environs were rendered a heap of ruins; the cottages of the peasants were swallowed up by the earth which yawned at every point, and the churches of Santiago and Sabundoi were ruined, and also my house, under the ruins of which I was buried. But, as if by a miracle I escaped from my sepulchre; for the same convulsion which swallowed up my house, threw it up afterwards upon the superficies of the earth, and I then managed to get out, although I was dreadfully crippled. The waves which the earth formed, rolled, in every sense of the word, similar to those of the sea, and to as great a height as happens when the ocean is enraged by a tempest. Eighty persons were swallowed up by them, with all their live stock; and the only ones that could escape were those of us who were able to run up a hill, which, although it shook as well as the rest, did not sink, neither did the waving of the earth affect it. PEDRO LEON Y LOPEZ.

FROM CANTON.—By the fast sailing ship Horatio, Capt. Howland, which sailed on the 2d of March, Canton papers have been received here dating only three and a half months back. They contain, however, but little news. The paper of the latest date says, "We hear from native authority that another disturbance has broken out amongst the hill tribes on the borders of Canton Province, near Leen-chow. Troops, it is said, have been ordered to the spot for the purpose of reducing them to submission."

The expulsion of the Catholic missionaries from Macao, appears to have been founded upon an old claim set up by the king of Portugal to permit no Roman Catholic missionaries to visit Asia, without his royal license being first obtained.

The last week has been prolific in arrivals, consisting of no less than three American vessels from England; one of them Amanda, sailed so lately as the 18th October, from London, brings only three newspapers, which contain nothing of interest. The other ships are the Alert, sailed 15th September from London and the Philip 1st from Liverpool, 30th September; the packets of neither of which are yet delivered.

Report states that a leading house in London had sent off a courier in July last, with despatches for Canton, by the overland route through Russia and Siberia, in the hope of arriving before the ships then sailing. We think it difficult to believe, however, that an undertaking so unlikely to accomplish the object in view, should have been seriously contemplated, far less attempted.

We learn that the Russian State Councillor, Foss, Secretary to the Russian Academy of Sciences, was about to set out from St. Petersburg to Peking, through the eastern Siberia, and had determined to devote three years to the journey.

Steam Communication with Suez.—We are happy to observe that effectual measures have been at length resolved upon to establish a steam communication with Suez, not only from Bombay, but also from Beagal.

The intention appears to be that four quarterly trips shall be made in the year, two by the government steamer Hugh Lindsay from Bombay, and two by the private steamer Forbes, from Calcutta.

FROM JAMAICA.—The ship Orbit, from Kingston, has brought files of papers to the 21st ult. Nothing important can be gathered from them in regard to the complexion of affairs in the English islands.

"Our accounts" says a Kingston paper of May 16th, "from the country by yesterday's post are neither flattering nor disheartening. Some correspondents dread the approach of the first of August, while others anticipate happier times. We hope the latter will not prove false prophets. It is pleasant to hear that the Police force is organizing with a greater rapidity than was expected: yet some complain of pay, &c. When the House meets, their first duty will be to settle this question.

The Despatch states, that the Marquis of Sligo was much indisposed.

H. M. ship *Forte* arrived at Kingston on the 14th from Barbadoes, with £30,000 sterling, all in shillings and pence, which had been transhipped from H. M. ship *Belvidera*. A Kingston paper of the 20th says: "The quantity of specie issued on Saturday by the Receiver General, appears to have given new life to the city. Change now being afforded, complaints will necessarily cease."

There has been a total failure of the plantain crop in Demarara.

The Legislature of Tortola have adopted resolutions expressive of their entire disapprobation of the Emancipation Act, and of the arrangements of the Government for the distribution of the compensation money.

KINGSTON, APRIL 28 TO MAY 24.—Mr. Christie, and his boy, are supposed to have been drowned near Green Bay, as the boat, paddle, &c. had been found.

SPANISH TOWN, April 25.—A party of gentlemen, consisting of eight, headed by John Sterling, Esq. proceeded about one o'clock this morning, from this Town to the wood above Tulloch's Estate, and adjoining Keith Hall, the property of J. G. Vidal, Esq. in St. Thomas in the Vale, for the purpose of breaking up the haunt of a band of desperate runaways, located in the midst of that extensive wood, who have been for some time committing depredations on the adjoining properties to a very great extent, especially among the cattle. These gentlemen, after a very fatiguing search in the woods, discovered their haunt, surrounded their huts, and after a desperate resistance, succeeded in capturing ten of the gang, among whom was (by her allegation) a free woman. Several shots were fired by these brigands, and they resisted, with sword in hand, their assailants; the latter, however, as above stated, mastered them, not without being unavoidably obliged to inflict some wounds upon three or four of them. They then searched their huts and found the carcasses of four beeves cut up, and a quantity of arms, ammunition, &c. The gallant little corps having fired their huts, brought them and their booty into town.

Mr. Joseph Tyrell, has commenced an action against the Editor of the Jamaica Despatch, and laid his damages at 5000*l*; Mr. T. having been accused in said paper of ill-treating Mr. John Scott.

The Jamaica Advertiser of May 20, says—The quantity of Specie issued by the Receiver-General on Saturday, appears to have given new life to the city. Change being now afforded, complaints will necessarily cease.

Hector Mitchell, Esq. Mayor of Kingston, had been upset in his carriage, and considerably but not dangerously hurt.

The Ship of war *Forte*, Com. Pell, had arrived at Kingston from Barbadoes, with 90,000*l*. in silver, which sum arrived there in the *Belvidere* from England.

LATEST FROM EUROPE.—By the packet ship *Orpheus*, arrived at this port on Saturday, we have received our files of English papers to May the 16th. The foreign news contained in them is of trifling amount, and not very interesting in its quality.

The Cotton Market continues to disappoint mercantile expectation, and to rise under the pressure of great arrivals. The sales continued large.

A great meeting has been held in London by the dissenters, for the purpose of petitioning Parliament for an entire separation of Church and State.

Paris, it is stated, cannot be said to be tranquil.

Accident at Toulon.—In the Chamber of Deputies on Wednesday, M. Eschesseriaux begged leave to remind the Chamber of an unfortunate event which took place at Toulon the day of the King's fête, when an American frigate in that port fired seven times upon a French vessel called *Le Suffren*, and killed two of the crew. He was inclined to think that this misfortune must have been the result of mistake or accident. As a proof of this, I shall read a letter written by the captain of the American frigate to the Maritime Prefect. It is as follows:—"Sir. It is with the profoundest regret, that on my arrival from Marseilles I learned the sad accident occasioned by the salute given by my frigate in honor of the King's fête. It is impossible for me to express what I feel upon this occasion. To understand it, I beg of you to put yourself for a moment in my situation, and I beg of you to except the most positive assurance I can give you of the profound grief of all the officers and crews of the American vessels who were at Toulon when this fatal accident happened." The letter then states, that the man whose malignancy had

caused the accident had been put under arrest, and should be brought to a court martial. The captain terminates his letter by entreating, that as a testimony of the regret felt for the accident, a sum of 5,000*fr.*, which had been subscribed by the officers and crews of both the American vessels, should be given to the families of the sufferers.

"Accounts from Alexandria give the most gratifying details respecting Egypt. Mehemet Ali continues forwarding with unremitting energy the work of this interesting country's regeneration, and adopting measures to increase his revenues, and to improve his army and navy. Egypt's prosperity being entirely regulated by the Nile's foundation, and this being very irregular, the Pacha has taken the wise determination of establishing, at the point of the Delta, locks, which, by commanding the river's waters, will insure their annual rise. The beneficial results of this important undertaking are incalculable. A Polytechnic school for the formation of officers, has by his orders been established at Boulac. The Professors of Mathematics, Drawing, Natural Philosophy, &c. are Europeans.

The establishment of Railways across the Isthmus of Suez is in contemplation. A report, stating the probably advantageous results of this undertaking, has been, after his own request, submitted to the Pacha's consideration.

The Sultan seeing himself, contrary to the most formal assurances, not only abandoned by his pretended friends—the English and French—but hearing them unblushingly express the high satisfaction the conduct of the Emperor towards him had given them, has reluctantly ratified the treaty of St. Petersburg. In remuneration of the important services which, as he is taught to believe, Achmet Pacha has conferred upon his country, his Highness has granted him, for life, the revenues of the district of Bolou and Gatzamboli, in Asia Minor.

FRANCE.

"Conflicts between the students who frequent the *Guinguettes* (tea-gardens,) in the quarter of Mont Parnasse, and the police, and between the populace and some soldiers of the 35th regiment, took place on Thursday last, outside the barriers, and appear, indeed, to be of hourly occurrence. Great numbers of arrests and domiciliary visits continue in Paris and throughout France. On the other hand, the Chamber of Peers daily discharge scores of prisoners against whom no evidence appears on the investigation of their cases. Dr. Gervais and the Editor of the *Messenger* having refused to go to trial on Saturday, they were condemned respectively to fines of 1000 francs, and to imprisonment for an alleged libel on the police. A new trial will be the consequence of this curious proceeding. We regret to learn that very serious apprehensions are entertained for the consequences of the first public discussion of the late melancholy events in Paris."

The late affair at Lyons.—Official returns from the Arsenal of the quantity of ammunition consumed during the six days of fighting:—2,204 cannon shot—360,000 cartridges (presumed musket)—580 kilogrammes, or nearly 1,200 English pounds of gunpowder, for mines and petards.

The National Guard of Tarbes and of twenty districts in the neighborhood of Lyons, have been dissolved.

The *Courrier de Lyons* of Tuesday states, that on Sunday last a numerous body of working-dyers assembled at a public house on the Quai de Bon Ren contée, for the purpose as it was presumed, for forming a combination for an increase of wages.—They were, however, immediately surrounded by the police, aided by strong detachments of troops, and 22 of them seized and taken to prison. A powerful sensation was created in that quarter of the town, but it does not appear that any excesses were committed.

PARIS, May 11.—The budget was voted yesterday *en masse*, by a majority of 241 against 70. The amount fixed for the general expenses, is 1,030,090,547 francs, and for the special credit allotted to public works, 27,590,000 francs, not including the supplementary credit, which Soult has demanded, and will obtain, of thirty-six millions, to increase the effective army to 420,000 men in these piping times of peace.

Cholera in Paris.—Some of the French medical journals state a certain number of cases of cholera have been met with in Paris during the last month; it does not appear, however, that they have been of great severity; indeed, from those which are given in detail, they should be disposed to say that the disease was no more than is usually met with when the weather becomes warm, and such as would not have attracted the slightest notice anterior to the irruption of the more formidable disease from the east.

GERMANY.

AMSTERDAM, MAY 6.—According to intelligence from Frankfort, dated 3d May, which we have received to-day, some disturbances took place there on the night of the 2d. Some students confined in the guard-house broke out, the soldiers fired on them, and the report having caused a great multitude to collect, many citizens fell victims to the fury of the soldiers. Ten innocent persons, it is said, were killed in this manner. Three students lost their lives, and two escaped.

LONDON, MAY 14.—A fatal affray took place at Frankfort on the 6th instant, between the populace and the armed force of the city. Three soldiers were killed, and it became necessary that the Prussian and Austrian troops should occupy the city to prevent further effusion of blood.

Extract of a letter of the 6th inst. from Frankfort:—"The unfortunate occurrences of the 3d instant have created great ferment here. The Senate, the Legislative body, the burghers, and the armed force of the town, particularly the Company of Chasseurs, cry out against one another with daily increasing acrimony. Yesterday morning, at 7 o'clock, the funeral of Frederick Schreiner, a blacksmith, who was killed before the constable's guard house, was followed to the burying-ground, which is about half a league from the town, by a very great crowd of people. In the course of the day several serious disturbances occurred at the public houses in the suburbs, in which two men were killed and several seriously wounded. Similar disorders arose in the commune of Bornheim, where also blood was shed. At nightfall a large body of Austrians entered the Zeil, the central street, and succeeded in clearing away the multitude which surrounded the guard-house, uttering desperate threats. An assembly of the burghers of Frankfort have agreed upon a petition to the Senate and Legislative body, complaining of the police, the officer of the guard, and the soldiers, who fired upon the people. It is said to have been signed by 800 of the wealthy citizens, and there is every reason to apprehend that the irritation will continue to increase until satisfaction is granted."

SPAIN AND PORTUGAL.

LONDON, 12th May.—It now turns out that the account of the embarkation of Don Carlos for England, at least at the time and in the manner described, is a fabrication. From the quarter, however, in which it was circulated, there can be no doubt that such a piece of intelligence was transmitted by the telegraph to Paris, and that the opprobrium therefore of such an infamous deception does not rest on this side of the Channel. At present the whole affair is involved in so much mystery that it is impossible even to form a conjecture of the exact origin of it, but every one in any way connected with Spain, is highly indignant at the imputation, and will not spare any trouble to bring the authors of it to light.

ARANJUEZ, MAY 5.—The treaty of alliance between England and France and the two kingdoms of the Peninsula has, probably, been already laid before the House of Commons. The details have not yet been published in this country, although some ill-defined rumors have got into circulation on the subject.

The Portuguese question may now be said to be settled, and the affairs of the Peninsula generally must henceforth lose much of the interest which has hitherto attached to them. It is true there are croakers at Aranjuez who make themselves heard as loudly as in other places, and who seem to take a perverse delight in anticipating the horrors of a general war. The departure of M. Liebermann, the Minister of Prussia, from Madrid, without leaving behind him a Chargé d'Affaires, as the Neapolitan Minister had done, has served to give some color to these alarms. Among better informed people, however, it is not doubted that the northern alliance will acquiesce very quietly in the new arrangements, and, like certain ill-tempered curs, however much they may growl for a little, will only fawn the more they are beaten.

In pursuance of a new arrangement, a strong Spanish force has marched to the relief of the Portuguese General, the Baron Bernordo de Sa. Boats of draught and burden and every sort of wheel carriage to be found near the frontier has been pressed into the service of the expedition, so that we may daily expect to hear that a blow has been struck in Portugal, which if promptly followed up, will not only decide the fate of the Usurper, but with him the hopes of the pretender to the Spanish throne.

In the mean time, it is but too evident that these more vigorous measures have not been begun a single day too soon. The latest intelligence from the

seat of war in the northern provinces is far from being of a flattering description. The despatch of Quesada is understood by those who are best acquainted with the subject as little better than an apology for a very serious defeat.

LATEST FROM EUROPE.—By the Sovereign, Capt. Griswold; the Eagle, Captain Lyon; and the Henri IV., Captain Castoff,—we have received European papers to the 20th ult. With much speculation upon the affairs of the continent, they contain hardly a fact of interest enough to copy.

The dates from Paris are to May 15th. Arrests, particularly of editors, continued to be frequent.

Two extraordinary votes or credit for the War Department, amounting to about £890,000 sterling, were agreed to by the Chamber of Deputies on Tuesday; one portion of it, however, by a majority of 54 only.

Paris May 15.—The King has granted from his privy purse the sum of 10,000fr. to be distributed at Lyons amongst the innocent victims at the late riots.

The Bill introduced into the House of Commons for the repeal of the Septennial Act has been lost, but the minority was so respectable in numbers, that the passage of a similar measure at no distant day is very probable. Ministers opposed the measure.—On the subject of Portuguese affairs, Lord Palmerston stated, in answer to some questions that were put to him in the House, "that a treaty which related to the affairs of the Peninsula had been signed by the Plenipotentiaries of England, France, Spain, and Portugal, and that as soon as it should be ratified it would be laid on the table of the house; that the ratifications of three of the parties had been received in London; that the approaching arrival of the ratification of Portugal had been officially announced, and that it might be confidently expected that the vessel bearing it would reach England in a few days.

At the levee of the King of England, on the 7th ult., Captain R. F. Stockton and Lieut. Alex. Slidell, of the United States Navy, were presented by Mr. Vail, the United States Chargé d'Affaires.

The cotton market continued in a very animated state, with a gradual advance in prices.

FROM EUROPE.—By the packet ship Silas Richards, Capt. Nye, which sailed from Liverpool on the 24th ult. we have received our files of English papers up to that date.

The only news of especial interest is the decease of the true patriot and friend of liberty, General Lafayette, of which our readers will find an account on page 384.

LIVERPOOL, MAY 24.—On Thursday week the annual debate on the septennial act took place, on the motion of Mr. Tennyson. After a sharp discussion—distinguished for very little argument and very many words—the motion was lost by a majority of 50.

It is generally rumored that ministers and Mr. O'Connell have come, or are coming, to some sort of a compromise on the Irish tithe bill. It is pretty certain that Sir Francis Burdett and Lord Ebrington have communicated with the member for Dublin on this point; and it is said that Sir Henry Parnell has been employed by ministers to negotiate the matter. It is supposed that if the appropriation clause be not adopted this session, it will be left over for subsequent consideration, which, no doubt, would end in its adoption. Mr. O'Connell has just addressed a letter to the editor of the *Dublin Pilot*. Speaking of ministers, he says:—

"They have solemnly pledged the Parliament to remove 'the just complaints' of the people of Ireland. A cabinet minister—one of the first in rank, and one of the highest in talent—has publicly and unequivocally declared that the tithe system in Ireland, as it relates to the established church in its present form, 'is a just complaint.' Shall it be redressed? Alas! I fear not. But why should I fear either alternative? If this 'just complaint' be redressed, then the people of Ireland will have obtained a great, a solid, a permanent advantage. If it be not redressed, then the honest, the undismayed repealers, will, with me, point to the falsification of the Address, and exclaiming against 'the living lie,' feel more deeply how impossible it will be to expect justice from any other than a domestic legislature. * * * For my part, I am ready to make every sacrifice to obtain the fulfilment of that promise."

The newspapers say that Mr. O'Connell is to be made Master of the Rolls in Ireland. At present, we suspect that this is a premature announcement.

If ministers will stop "agitation" by doing justice to Ireland, we do not see why the best lawyer in Ireland—which O'Connell is—should not be placed on that bench which Curran occupied.

[From the National, May 20.]

SPAIN.—A letter from Madrid, of the 17th, says: "Our President of the Council has just transmitted an official note to the Representatives of the Powers which have not yet recognized our Queen, inviting them to do so immediately, because, since the death of King Ferdinand, the Sovereigns have had ample time to convince themselves that the Spanish nation considers Isabella as Queen both *de facto* and *de jure*, and that the weak minority which is fighting in Navarre in the name of Don Carlos, is not a party, but a faction. Should this recognition not be immediately made, the President of the Council intimates to those that may refuse, that they may apply for their passports in 24 hours.

"The Foreign Ministers, doubtless, after consulting together, replied, that they expected the orders of their Cabinet on the communication which had just been addressed to them, at the same time as a copy of the Royal Statute. The Papal Nuncio, who received a similar communication, has answered to the same effect. This act of our Ministry is not public, but you may consider it as certain that it was previously discussed with the Plenipotentiaries of France and England.

"Since the treaty of offensive and defensive alliance between France, England and Portugal, has been made known here, our troops no longer content themselves with seeking in Portugal after a grotesque Pretender; they combat the Miguelites in concert with the Generals of Don Pedro.

"General Quesada, greatly mortified by his late defeat near Viterria, has taken the field with 6,300 men, to combat Zumalacarreguy. The Government has just given orders to all the columns in Old Castile, on the banks of the Douro, and in part of Aragon, to proceed by forced marches to his assistance. Part of our garrison is gone to take up positions on the road to Burgos, and to cover the points which the other troops have left."

A courier arrived yesterday from Constantinople with the answer of Admiral Roussin to the despatch announcing his appointment as Minister of Marine.—The Admiral entreats his Majesty to permit him to retain the Embassy at Constantinople. In consequence Admiral Jacob has been appointed Minister of the Marine and the Colonies, and last night took the oath in the presence of the King. The Ordinance by which the above appointment is made appears in the *Moniteur* of this morning.

VIENNA, MAY 6.—We know for certain that the Poles are to leave Switzerland. It seems that the measures adopted by the adjacent states have rendered the Confederation much more disposed to listen to the well-founded remonstrances that have been addressed to it. In this case it acts conformably to its own interest; for what would become of its foreign commerce if all the issues were closed against it. Interest is paramount to principles, and whatever attachment to the cause of the Poles may exist even at Bern in a certain party, it must give way to necessity.

BRUSSELS, May 19.—The Court will go into mourning for a month, on account of the death of the Prince Royal.

The remains of the Prince will be embalmed, and deposited in the Church of St. Gudule, in the sepulchral vault of the Dukes of Brabant. It is supposed that the funeral will not take place for several days. It was at first contemplated to inter the remains of the Prince in the Cathedral of Malines, but it has been decided that they shall be transferred to Brussels.

Their Majesties saw nobody the day before yesterday. We are told it would be found difficult to form an idea of the profound affliction which they feel at the loss of the first fruit of their union. The King was obliged to make a great effort to sign some of the letters of notification laid before him by Minister for Foreign Affairs. The Ministers and several persons high in office went to Lacken, but could not be admitted. The Theatres will be closed for three days.

The sepulchral vault of the Dukes of Brabant, in the chancel of the church of St. Gudule, was opened on the 19th. Several tombs and numerous epitaphs of the ancient Dukes of Brabant were found; one in particular, of the date of 1380, in a perfect state of preservation. On the tomb was deposited an enormous silver sword, with the arms of Brabant chased on it; on another tomb is a gold vase, with the arms of Austria, containing the heart of the Archduke Er-

nest, who died Governor-General of the Netherlands at the end of the 16th century.

SUMMARY.

Dr. Jones, in a letter to Professor Silliman, states that there is a colony of Gipsies in Louisiana. They were brought over by the French at an early period, and colonized. They have lost, however, their wandering gipsy habits, and attend to regular business. Their complexion is darker than the French, and they still call themselves gipsies or Egyptians.

A new Muzzle.—In the Select Council on Thursday evening last, as we learn from the Philadelphia Gazette, Mr. Meredith introduced an ordinance, calculated more effectually than those now in existence, to secure our citizens against the dangers apprehended from dogs in the summer season. It provides that after the first of July next, instead of the leather strap now used, all dogs shall be muzzled with a substantial wire basket, placed so as effectually to enclose the mouth, and prevent snapping or biting. This muzzle is believed to be much easier for the animal than the strap now used, while at the same time it is more effectual. A dog with a strap is not prevented from biting, but with the wire basket, this will be impossible, as the whole mouth is enclosed. The apertures between the wires will enable him to drink with as much facility as if he were without a muzzle. The ordinance was adopted without opposition, and promptly concurred in by the Common Council.

Some persons lately employed in quarrying stones at Guernsey, Ohio, came across the body of an Indian child completely petrified. This extraordinary specimen was found imbedded in a solid mass of rock, and has the appearance of a stone image, somewhat imperfect, to be sure, yet on the whole, a very fair outline of a young Indian—done in limestone. A small row of Indian beads (too hard originally to need petrification, we suppose) was found in the same cavity.

Large and Valuable Cargo.—The fine new ship Solon, Captain Lambert, of Portsmouth, (N. H.) for Liverpool, being her first voyage, was cleared this morning by L. Trapmann, with a cargo of 1900 bales of Cotton, weighing 618,607 pounds, and valued at \$101,151 89.—[Charleston Patriot, June 14.]

INTERESTING MEETING.—It is intended that the Jupiter shall sail for Liberia on Wednesday. Among the passengers will be the Rev. Mr. Skinner, Missionary and Physician; Mr. Searl, a graduate of Amherst College, and Mr. Finley, a graduate of Princeton, Teachers, under the patronage of the Ladies' Association of this city. Mr. Searl is also the Vice-Agent of the New York City Colonization Society, charged with selecting a suitable place for locating the proposed new Colony.—Dr. Webb, from Washington, D. C. and Dr. McDowell, from Edinburgh, Physicians, in the employ of the Parent Society, will also sail in the Jupiter—together with Eunice Sharp, a colored woman of education and piety, from Vermont, who goes forth of her own accord and notion, to devote herself to the cause of education in Africa. Preparatory to the embarkation of this self-devoted band, appropriate religious services were last evening celebrated in the Brick Church, in which the congregation of the late Cedar street Church united.—An admirable address for the occasion was pronounced by the Rev. Cyrus Mason, and the concluding prayer by Rev. Dr. Young.—[Com. Advertiser of yesterday.]

Liberia Herald.—Several gentlemen connected with the type, printing, and paper business, have thought it time that the Herald should appear in a new dress. Some of the donations are as follows: E. White, 100lbs. small pica; Connor & Cooke, 100lbs. pica and a small font two line do., G. & D. Bruce, job type, flowers, &c. Hoe & Co. three pair cases, brass rules; printing office furniture, &c. Gracie, Prime & Co. six reams medium paper; Editors Observer, two reams imperial do.—[Jour. of Com.]

Le Repareteur, of Lyons, gives the following characteristic anecdote of the behavior of a French soldier during the late riots in that city:—"In the Quartier du Collège, just at the termination of the disastrous struggle between soldiers and citizens, one of the insurgents suddenly rushed forward, and putting his musket almost to the face of a soldier, pulled the trigger. The musket missed fire, upon which the man throwing off his jacket, kneeled down, and addressing the soldier, said, 'It is now your turn—here is my breast; I am a Republican.' The soldier did not move from his ranks, nor did he offer to raise his musket, but coolly said, 'I don't know how to fire so close,' and allowed the man to depart."

The 29th Annual Report of the Trustees of the Public Schools of this City has been published, and shows gratifying results of their extensive and faithful operations. The advantage conferred upon the city by these invaluable institutions can hardly be too highly prized, or too carefully guarded and perpetuated. So excellent and efficient is the system of this Society, that its adoption, on proper modifications, may be confidently recommended to other cities and indeed to many smaller towns.

Extract from the Report of the Trustees. In the report of last year, it was stated that there were on the registers of the 26 schools, contained in the 11 buildings belonging to the society, and in the school at the Alma-house, . . . 7,034
And of 6 primary schools, . . . 792

Making a total of . . . 7826
at that time under the instruction in the schools of the society. Since that period, there have been 14,214 received into, and 10,774 have left the day schools; and there are now attending them the greatly increased number, which is classed as follows:

On Registers of 11 Boys' Schools,	3354	
Do. 11 Girls' do.		2795
Do. 3 Boys' and Girls' Schools	} 450	227
vis. No. 1, 6, and 9,		
7 primary departments,	1412	1412
17 Schools,	745	870

Boys, 5961, GPs, 5304

Showing a total of 11,255 children now belonging to the public schools in this city.

There are at this time in the employ of the public school society, 49 teachers, 28 assistant teachers, and 75 monitors—the aggregate of whose salaries for a year amount to 35,650 dollars.

The following account of the employment and improvement of the children during the past year, is too interesting not to deserve a place in every newspaper in the land.

The first class learn the alphabet, and the ninth is the highest reading class.

2259	have been promoted from 1st to 2d Class.	
2343	do do	2d to 3d do
2546	do do	3d to 4th do
2525	do do	4th to 5th do
1557	do do	5th to 6th do
1621	do do	6th to 7th do
1303	do do	7th to 8th do
562	do do	8th to 9th do
1820	do	to writing on paper.
3291	do	to addition and subtraction.
2375	do	to multiplication and division.
1143	do	to the compound of 1st four rules.
714	do	to reduction.
497	do	to rule of three.
963	do	to practice.

Of the 6826 children in the Schools, as distinguished from those that are primary, and the primary departments, there are—

1838	studying Geography.
874	do Grammar.
93	do Book-Keeping.
281	do History.
523	do Astronomy.
126	do Algebra.

[The report was signed by Peter A. Jay, President, Robert C. Cornell, Vice President, George T. Trimble, Treasurer, Lindley Murray, Secretary, and 79 Trustees.]

Sudden Death.—CHARLES BALDWIN, Esq., an eminent legal practitioner, and a highly respectable citizen, was yesterday struck by the hand of death in a manner awfully sudden and impressive. He lodged at the City Hotel, and had just seated himself, without any indication of indisposition, at the large dinner table of that establishment, when, on reaching out his hand to receive a plate that was handed to him, he fell back lifeless. The vital spark was, as if in the twinkling of an eye, totally extinct.—[Courier & Enquirer.]

More Shipwrecks!—A few days since, we published a list of ten square rigged vessels, bound from the old country to Quebec, which have been cast away this season, accompanied by the loss of 456 lives, besides all on board a bark unknown. The Montreal Gazette received last evening, adds eight more to the number of vessels, accompanied with the loss of 248 lives, making a total of eighteen vessels, and 704 lives lost!! It does seem to us, that after making all due allowances for difficult navigation, such a constant succession of disastrous shipwrecks indicates that crazy ships are employed, or

that they are commanded by incompetent men. The latest date of the loss of any of the vessels mentioned is May 10th. And yet the number lost up to that date, was nearly one-eleventh of the whole number (205) arrived prior to the 27th, (17 days later) The eight additional vessels lost are as follows:

A vessel, believed to be from Cork, and to have been wrecked near the Magdalen Islands, about the 9th May, said to have 250 emigrants on board, of whom two, the only survivors, had arrived at Charlottetown, Prince Edward Island.

Brig Patriot, Anderson, from Aberdeen for Quebec, lost at Cape Rosier, Gaspé, May 7, on lives lost.

Bark Diadem, Shears, from—, wrecked on Cape Gaspé, 7th May, all saved.

Brig Scarborough Castle, Moey, from Hull, abandoned at sea in long. 41, 30th April, all saved by the Retreat, from Alloa.

Brig Cherub, Welsh, from Greenock, struck on Goose Island, river St. Lawrence, 5th April, crew and passengers saved, vessel condemned and sold.

Brig Trafalgar, form St. Johns, N.B. struck on a piece of ice in the Gut of Causo, no lives lost—vessel since lowered into Arichat.

Brig Robert William Harris, Ferrie, from Liverpool, for Newfoundland and Quebec, struck on a piece of ice, 25th April and sunk in twenty minutes—crew saved after being five days in the boats.

Brig Isabella, Simpson, from Leith, went on shore at Cape Chat, in a snow storm, passengers and crew, 97 in number, all saved except the mate.

THE FUNERAL OF A GERMAN STUDENT.—I was one dark January night occupied at my writing desk, weaving a woof of historical events, crossed with a warp of fiction—or sketching some light profile of national portraiture—or endeavoring to rouse a spark of English feeling for the trampled-on country in which I could not live without being interested for it—but whether it was a volume, or a monthly or a daily "article" at which I worked is of small matter to the event by which my labors were interrupted.

A low, moaning melody was borne on the gusts which swept down the valley of the Neckar, at the opening of which the town of Heidelberg is situated. Its main street, running for a mile between the river and the mountains, formed a channel for the free passage of the dirge, for such I soon ascertained it to be. Looking from my window, I observed a lurid glow rising above the house tops and throwing its red reflection upon the snow which covered them. A waving cloud of thick smoke marked the line of the procession, the leaders of which soon appeared coming round a slight curve in the long narrow street.

I immediately knew it to be a student's funeral which thus roused with lugubrious harmony the snow enveloped dulness of the place, and sent out a crowd of youths to parade the town, many of them in costumes incongruous with the season, and not quite consistent with the scene; but the whole solemnity showing an arrangement of martial discipline which made it more than commonly impressive.

The six leaders were wrapped in dark cloaks, and stalked on some paces before the band, composed of horns, bugles, and bass instruments, whose wailing tones swelled out as the procession approached, in a strain of comingled depth and wildness. Next appeared a young man of almost gigantic height, dressed in a suit of black, with large military boots and spurs, a huge cocked hat, trimmed with white feathers, a colored scarf across the shoulders, a long white cavalry gauntlet reaching nearly to his elbows, and a drawn rapier in his hand. He was the director of the various manoeuvres, and his motions of command were obeyed along the whole moving column, whose double files, of some hundreds in number, stretched down the entire length of the main street.

All the men thus forming the living hedge at both sides carried torches, which were flourished in irregular movements, some dashing the blazing ends against the frozen snow on which they walked, producing by the mixture of flame and smoke, a strangely solemn effect of brilliancy of gloom. There were a couple of dozen of the youths dressed in the same grotesque mixture of civil and military costume as the chief captain, and who followed his comrades in regulating the march. But not a word was spoken aloud, no sound was heard throughout the peopled streets save the oppressive harmony of the dead march, in strains indescribably plaintive and original, the slow tramp of hundreds of feet, and the heavy tolling of the church bell, as the procession approached the burial ground, which was a short distance from, but not in sight of, the house I occupied.

The coffin bearers wore suitable cloaks, sombre and fitted to protect the wearer from the frosty air

and flakes of snow which were hurried on by the east wind. But at each side of the bier walked six or eight chief mourners, all bareheaded, dressed in full suits of black, with silk stockings, thin shoes, and *chapeaux de bras* under the arm! How civilization and refinement lose themselves in burlesque, thought I; and what a chance there is of those foolish followers of an absurd fashion falling victims in their turn, but to a death less glorious even than that which had sent this one to his last account!

A concentrated blaze of light, rising far above the tall and leafless trees, soon marked the spot where the mortal remains of the young duellist were lowered into the earth, while his hundred of former companions stood round in serried circles, doing honor to his obsequies. I could not withdraw from the contemplation of the scene, although it was only through the mind's eye it was evident. The whole procession had passed out of sight, with the straggling citizens of both sexes, young and old, by whom it was accompanied in solemn silence. The long street was quite abandoned, and the rays from the lamps which swung at wide intervals across, fell heavily upon the snow and the dark buildings at either side. Suddenly a loud burst of song rose upon the air. The deep harmony of hundreds of male voices was joined in the requiem, and quite overpowered the instrumental accompaniment. It was sad and solemn beyond all description. No female notes lightened the full throated harmony. Never did sorrow find a more fitting tone than in the chorus of that deep lament.

I could no longer resist the desire to mingle with the throng. An impulse of sadness hurried me resistlessly along, as the swell of the sea heaves a vessel on its silent course. I was soon at the door of the grave yard. But all was once more still. The death dirge had ceased, and the earth heap was loosely piled over the body which had taken its dark berth below. The crowd quickly began to hurry forth. In a moment or two the band appeared outside, and it struck up a new, but a not less solemn strain than before. It was one of those fine martial airs to which men move to battle, which thrill through the nerves, and call the dull or stagnant feelings to arms. Every one present seemed to feel the inspiration. The procession which was now formed had all the appearance of a military train. There was no coffin, no bier, and apparently no mourners. A tone of excited, of desperate ardor pervaded those whose measured steps so lately kept time with the melancholy music of the dirge. The horns echoed along the wood-covered hill, at the foot of which the procession now moved back towards the building of the University, and the majestic ruins of the castle above returned the bugle's notes in wild and unearthly mimicry.—The grotesque diversity of costumes worn by the students, their countenances varying from beardless animation to hair-covered ferocity, the gestures with which each man tossed his flaring torch above his head, the glittering of the sword blades here and there, the wintry harshness of the scene, the wind gusts heard at intervals in the skeleton branches of the trees, all formed a whole of combinations, each one in fierce keeping with the rest.

We,—for I had joined the crowd and felt myself identified with the ceremony—arrived at the large square of the university. Here the leaders halted the torch bearers in double ranks, at each of the four sides; and at a signal given, every one advanced towards the centre, and flung his flambeau on the earth. In a few minutes the accumulation of fiery brands formed a considerable pile; and, while a thick volume of smoke and flame rose up, and was carried rapidly down the wind, the whole assembly once more shouted a chorus of almost stuning harmony. Every one knows how the German youths are trained up to vocal music! and the effect of several hundreds, on such an occasion as this, singing in parts and without a note of discord, one of their grandest national hymns, baffles imagination and defies the pen.

It requires but little strength of fancy to believe that the spirit of patriotism rose on this union of incense and melody. It seemed emblematic of that holy desire for freedom which swells and glows in the German heart. A people imbued with a strong passion so developed cannot, I thought, be doomed to perpetual thralldom. There is a longing after a liberty that must some time find a vent and secure a triumph.

BEETHOVEN.—From La Revue Francaise.

When Beethoven was young, at the age of twenty eight, as every one knows, he was struck with deafness. But it is not equally well known that this infirmity rendered him unhappy, mortified and irritable. "O my friends," he would say in his energetic lan-

guage, "you who believe me to be obstinate, ill-natured and misanthropical, and who represent me as such, you do me great injustice. You are not aware of the secret but powerful reasons which cause me to appear such in your eyes." Beethoven declared that from his childhood he always strongly felt sentiments of benevolence towards the human race.—But having become deaf, he bade adieu to the world; or if he ever mingled with his fellow men, it was to suffer—for he could not bring himself to say "Speak louder—I am deaf." He could not resolve to acknowledge the imperfection of a sense, perhaps more important to him than to any other individual, and which he once possessed in a rare state of perfection.

"I," said Beethoven, "am altogether cut off from society. I cannot listen to the conversation of my friends—to me is denied all the happiness which is usually derived from social intercourse—and when I struggle to overcome my repugnance to mingle with society, you can hardly conceive of the agony of my feelings, when some one near me listens with apparent delight to the sounds of distant music, which I cannot hear. At such times I am almost tempted to commit suicide. One thing only binds me to life. It is my extreme devotion to the art of Music. I cannot quit the world until I have produced all which I am capable of producing."

EDINBURGH—*Strange Bed-fellow*.—About a week since, an old woman, residing in a house on the Castle-hill, was unexpectedly surprised, on awaking from her night's rest, to find a strange animal lying at her back, with one of its paws laid over her shoulder. Screaming with affright, she left her bed, and seizing a towel, she beat it with all her might, when, with one bound, it sprang to the furthest corner of the room, and at length took refuge in another bed which stood in the same apartment. When the poor woman had a little recovered from her alarm, and had dissipated the idea that it was a visitor from the nether regions, she remembered that a collection of wild beasts were at present exhibiting on the Mound, and began to suspect that her lodger belonged to the number. It was discovered that one of the kangaroos had made its escape during the night, and going up to the Castle-hill, had found this poor woman's door open, and, upon examination, finding that it might be as completely accommodated beside her as in its own den in the menagerie, betook itself to rest, which, however, was broken in upon in the morning in the manner we have mentioned.

SURVEYORS' INSTRUMENTS.

Compasses of various sizes and of superior quality warranted.
Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by
E. & G. W. BLUNT, 144 Water street,
J81 61
corner of Maidenlane.

TOWNSEND & DUFFEE, of Palmyra, Manufacturers of Railroad Rope, having removed their establishment to Hudson, under the name of Duffee, May & Co. offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J. B. Jervis, Eng. M. & H. R. B. Co., Albany; or James Archibald, Engineer Hudson and Delaware Canal and Railroad Company, Carbon dale, Luzerne county, Pennsylvania.
Hudson, Columbia county, New-York;
Janu 2 y 28, 1833.

ALBANY SEED-STORE AND HORTICULTURAL REPOSITORY.

The subscriber having resumed the charge of the above establishment, is now enabled to furnish traders and others with FRESH GARDEN SEEDS, upon very favorable terms, and of the growth of 1833, warranted of the best quality.

The greatest care and attention has been bestowed upon the growing and saving of Seeds, and none will be sold at this establishment excepting those raised expressly for it, and by experienced seedmen; and those kinds imported which cannot be raised to perfection in this country; these are from the best houses in Europe, and may be relied upon as genuine.

It is earnestly requested whenever there are any failures hereafter, they should be represented to the subscriber; not that it is possible to obviate unfavorable seasons and circumstances, but that satisfaction may be rendered and perfection approximated.

Also—French Lucern, White Dutch Clover, White Mulberry Seed, genuine Mangel Wurzel, Yellow Locust, Ruta Baga, and Field Turnip Seeds, well worth the attention of Farmers.

W. THORNTON,
347 N. Market st. (opposite Post Office.)

Catalogues may be had at the Store; if sent for by mail, will be forwarded gratis. Orders solicited early, as the better notice can be done in the execution.

Mr. Thornton is also Agent for the following publications, to wit:—

NEW YORK FARMER and American Gardener's Magazine.
MECHANICS' MAGAZINE and Register of Inventions & Improvements; and the

AMERICAN RAILROAD JOURNAL and Advocate of Internal Improvements; and the
NEW-YORK AMERICAN, Daily, Tri-Weekly, and Semi-Weekly; either or all of which may be seen and obtained by those who wish them by calling at 347 North Market street, Albany.

STEPHENSON,

Builder of a superior style of Passenger Cars for Railroads
No. 264 Elizabeth street, near Bleecker street,
New-York.

RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part of the New-York and Harlem Railroad, now in operation.
J 15 15

RAILROAD CAR WHEELS, BOXES AND OTHER RAILROAD CASTINGS.

Also, AXLES (furnished and fitted to wheels complete at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to. Also, CAR SPRINGS.

Also, Flange Tires turned complete.

J8 ROGERS, KETCHUM & GROSVENOR.

NOVELTY WORKS,

Near Dry Dock, New-York.

THOMAS B. STILLMAN, Manufacturer of Steam Engines, Boilers, Railroad and Mill Work, Lathes, Presses, and other Machinery. Also, Dr. Nott's Patent Tubular Boilers, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited.
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INSTRUMENTS.

SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

EWING & HEARTIE, at the sign of the Quadrant, No. 43 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude. For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewing & Heartie.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable. They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES P. STABLER,
Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' Instruments of your Manufacture, particularly Spirit Levels, and Surveyors' Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These Instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

WILLIAM HOWARD, U. S. Civil Engineer.

To Messrs Ewing & Heartie.—As you have asked me to give my opinion of the merits of those instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming acquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprise so well merits, I remain, yours, &c.

B. H. LATROBE,
Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them, upon application, to any person desirous of perusing the same.
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LOCOMOTIVE ENGINES.

THE AMERICAN STEAM CARRIAGE COMPANY, OF PHILADELPHIA, respectfully inform the public, and especially Railroad and Transportation Companies, that they have become sole proprietors of certain improvements in the construction of Locomotive Engines, and other railway Carriages, secured to Col. Stephen H. Long, of the United States Engineers, by letters patent from the United States, and that they are prepared to execute any orders for the construction of Locomotive Engines, Tenders, &c. with which they may be favored, and pledge themselves to a punctual compliance with any engagements they may make in reference to this line of business.

They have already in their possession the requisite apparatus for the construction of three classes of engines, viz. engines weighing four, five, and six tons.

The engines made by them will be warranted to travel at the following rates of speed, viz. a six ton engine at a speed of 15 miles per hour; a five ton engine at a speed of 18 miles per hour; a four ton engine at a speed of 23 1/2 miles per hour. Their performance in other respects will be warranted to equal that of the best English engines of the same class, with respect not only to their efficiency in the conveyance of burthens, but to their durability, and the cheapness and facility of their repairs.

The engines will be adapted to the use of anthracite coal, pine-wood, coke, or any other fuel hitherto used in locomotive engines.

The terms shall be quite as favorable, and even more moderate, than those on which engines of the same class can be procured from abroad.

All orders for engines, &c. and other communications in reference to the subject, will be addressed to the subscriber, in the city of Philadelphia, and shall receive prompt attention.

By order of the Company,
WILLIAM NORRIS, Secretary.

December 2d, 1833.

For further information on this subject see No. 49, page 772, Vol. 2, of Railroad Journal.]

RAILWAY IRON.

	Flat Bars in
Ninety-five tons of 1 inch by 1/2 inch,	lengths of 14 to 15
200 do. 1 1/2 do. do.	feet counter sunk
40 do. 1 1/2 do. do.	holes, ends cut at
800 do. 2 do. do.	an angle of 45 de-
800 do. 2 1/2 do. do.	grees with spli-
soon expected.	cing plates, nails
	to suit.

250 do. of Edge Rails of 36 lbs. per yard, with the requisite chairs, keys and pins.

Wrought Iron Rims of 30, 33, and 36 inches diameter for Wheels of Railway Cars, and of 60 inches diameter for Locomotive wheels.

Axles of 2 1/2, 3, 3 1/2, 4, and 5 inches diameter for Railway Cars and Locomotives of patent iron.

The above will be sold free of duty, to State Governments and Incorporated Governments, and the Drawback taken in part payment.

A. & G. BALSTON,
9 South Front street, Philadelphia.

Models and samples of all the different kinds of Rails, Chairs, Pins, Wedges, Spikes, and Splicing Plates, in use, both in this country and Great Britain, will be exhibited to those disposed to examine them.
d71msovr

ENGINEERING AND SURVEYING INSTRUMENTS.

The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely new: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy; also, a Railroad Goniometer, with two Telescopes—and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.

WM. J. YOUNG,
Mathematical Instrument Maker, No. 9 Dock street, Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.)

Baltimore, 1832.
In reply to thy inquiries respecting the instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad. I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable.

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sights, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to lateral angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying off rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,
JAMES P. STABLER, Superintendent of Construction of Baltimore and Ohio Railroad.

Philadelphia, February, 1833.
Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors.

E. H. GILL, Civil Engineer.
Germantown, February, 1833.

For a year past I have used Instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these Instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY B. CAMPBELL, Eng. Philad.,
Germantown, and Norristown Railroad

THE UNDULATING RAILWAY.

(Continued from page 373.)

The Editor of the London Mechanics' Magazine afterwards states, that

"An Attentive Reader of the Undulating Controversy" proposes that a sum of money should be staked on the result of a trial of an undulating line. He requests us to ask, 'Whether Mr. Badnall and Mr. Cheverton have confidence enough in their respective opinions to come forward singly, or supported by their friends and advocates, and stake a sum of money on the event?' He, for one, he adds, 'would be happy to back Mr. Badnall.' The wager, our correspondent suggests, might be laid so that 'the winner should pay for the expense of the trial; which expense, in case of failure, would be merely that of laying down the rails and taking them up again, on any projected line.' The sum he names is from £1,000 to £2,000."

This challenge has brought Mr. Badnall out again, and we presume for the last time. The controversy has been conducted with good feeling on both sides. The result we shall soon know, and our readers shall very speedily be made acquainted with it.

WAGER OF £1,000.—Sir: In your "Notes and Notices" of last week, I observe a correspondent suggests that a wager might be laid between Mr. Cheverton and myself, or our friends, on the result of a trial on an undulating line. Individually, I am not in the habit of offering or accepting bets, but if Mr. Cheverton feel inclined to adopt the recommendation of your correspondent, I shall be happy, on the part of my advocates, to enter, (through the medium of your Magazine,) into an agreement with him, and if he be similarly inclined, to stake £1,000 on the result of a trial on five or ten miles of road. The stakes to be lodged in a banker's hands. I trust that the memorial which has been presented to the London and Birmingham Railway Directors may induce them and their engineer, Mr. Stephenson, to institute, as I anxiously anticipate, an impartial trial on that line of road, on their own account; in which case, if Mr. Cheverton be the winner, he will gain £1,000 without deductions. Should he prefer betting a greater sum, I shall be happy to submit his offer to those of my friends who may feel inclined to speculate.

The only sum that I, in conjunction with my partner, Mr. Stephenson, should feel disposed to win or lose, (which may be added to the stakes,) would be the expense of a dinner and wine, at the Albion Hotel, Aldersgate street, for all who have written on the subject, *pro or con*, in the Mechanics' Magazine—your worthy self, Sir, being President.

Yours, very obediently,
RICHARD BADNALL.

Manchester, April 7, 1834.

Riots and Murder on the Washington Rail Road.—The riot among the labourers employed on the Washington Rail road, of which we made brief mention in yesterday's *American*, it seems first assumed an appearance that attracted notice, on Sunday evening. The parties arrayed against each other are known as the *Fardowns* and the *Corkonians*. On Monday morning a body of militia hastily collected in the neighborhood, succeeded for a time in restoring apparent quietness by the arrest of a number of the rioters, but they afterwards congregated in great numbers and came to open collision. Some of the shanties, or temporary houses of the laborers, were destroyed, but the injury on that day seems to have been confined to themselves.

Yesterday morning Gen. Ch. S. Ridgely having transmitted a requisition to this city for a reinforcement of troops, a detachment of Infantry and Riflemen, under the command of Major Finley, proceeded to the scene of the disturbance. It was composed of Captains Hickman's, Branson's and Cheves' corps of infantry, and Captains Cook's and Maguire's corps of Riflemen. The troop of horse commanded by captain Bouldin also marched on the same service.—[*Baltimore American*.]

Postscript.—At half past eight, last night, we

saw one of the members of the troop of horse, who had just returned to the city. He informs us that the troop arrived at the place of riot yesterday morning, in advance of Major Finley's command, and that they found the rioters pretty well tranquilized, although in the early part of the day there had been some violent passes between them. One of the rioters, who had fired at Gen. Ridgely, was shot in the mouth, and this, our informant states, was the only occasion on which fire arms were used. Major Finley's detachment arrived on the ground in the afternoon, and when our informant left, matters were apparently quiet. In the course of the contests which had already taken place, a number of shanties were burnt. Four persons, it appears, were killed in the affrays, one of whom was a female. The rioters arrested will, it is supposed, be escorted to Annapolis jail to-day.

Iron Case.—United States District Court, June 17 and 18—Judge Betts presided. The United States vs. John F. Sarchet. This was an action to recover the amount of a bond passed by the defendant to the Collector for 750 dollars, being the duty claimed at three cents per lb. on iron studs or stays, and links, imported by the defendant, but which he contended was illegal, and should have been but one cent. per lb. on the stays as castings of iron not otherwise specified, and that the links should have been admitted duty free as a non enumerated article, or at most that they were only subject to a duty of 25 per cent. ad valorem as a manufacture of iron. The Collector claimed duty on both articles as parts of iron chains, partly manufactured, and as such subject to 3 cents per lb.

Verdict.—That the links were subject only to a duty of 25 per cent. ad valorem as a manufacture of iron, and the studs to one cent. per lb., as castings of iron not otherwise specified. This verdict reduces the amount of duty claimed by the Collector nearly 75 per cent.

For the United States. Mr. Price, the District Attorney, and Mr. Philip Hamilton.

For the Defendant, Messrs. Charles Walker and D. Prescott Hall.—[*Jour. Com.*]

DEATH OF GENERAL LA FAYETTE.

LAFAYETTE IS NO MORE. This true patriot—this noble philanthropist—this patriarch of liberty, in many lands, weighed down with years and honors, has yielded up his valuable life, and left a place that no man breathing can be made to fill. He died in the 77th year of his age, in the full possession, up to the last moment of his existence, of all his mental faculties. He died, as we learn from an English paper, on Tuesday, the 22d of May. "During the last fifteen years of his life, he was the only individual alive who had taken a leading part, and figured in a conspicuous manner, in the event of the first revolution. His political career is so well known, that it would be hardly necessary to enter into any thing like an account of it here. Up to his last hour he retained the fullest possession of his mental faculties.—The infirmities of age had only visited his physical frame. Both he and his intimate friends had perceived many months ago that he had begun to sink. The decay of nature, however, was more rapid with him than it had threatened when its first decided symptoms became visible. The venerable General was born on the 1st of September, 1757, and consequently wanted little more than three months to complete the age of 77. The wondrous scenes in both the New World and the Old, in which the name of Lafayette was prominently distinguished, are among the most remarkable in the annals of mankind; and we may safely aver, that history does not in all her records possess a name which has passed through the searching ordeal of public opinion, even in the darkest and most tempestuous times, more pure and unsullied than his whose death we are called upon to deplore."

The English papers generally, in speaking of this event, mention it with a due sensibility to the manifold public and private virtues of the illustrious deceased. They speak of him always, however, as "good" rather than "great;" the mere appendage of great events, not the moving spirit among them—a view of his

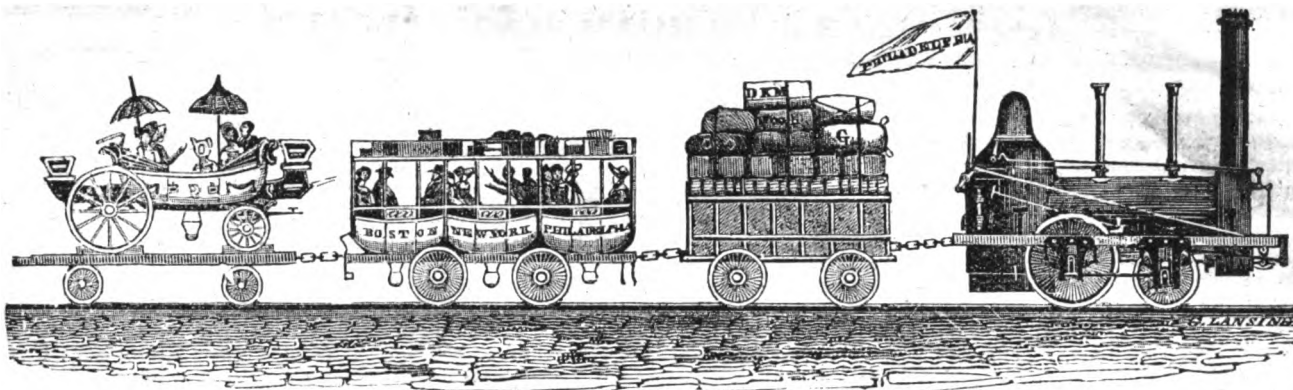
character, which will unquestionably be concurred in by the mass of mankind; for the majority of men estimate the superiority of their fellows solely by the indications of power—of power, under whatever shape it may present itself; no matter how unequal may be its developments, or how destructive its display. What mind does not shrink before the blazing intellect of Byron—the iron ambition of Napoleon. But how few can appreciate the moral grandeur—the wonderful assemblage—the just balancing and development of good and great qualities in the character of Washington! and yet that character was as much a *phenomenon*, as singular a departure from the wonted exhibitions of human nature under its most glorious aspects as ever had a place upon the annals of mankind.—Unhappily for the best interests of the human race men always connect the idea of extravagance with ability, and moderation is ever considered the sure indication of mediocrity. The justness of Lafayette's life, the singular devotion to principle under all circumstances which marked the career of the pupil of Washington, is, viewed by this light, sufficient to abnegate his title to greatness, who was great in every thing but crime. Who rushed foremost wherever the good were up and doing in the service of mankind, and sunk into obscurity when evil men were the popular idols. The chivalric champion of Liberty, where Washington led the way: the unheard of exile when Marat and Robespierre had triumphed: the lonely recluse when the splendors of Napoleon's reign made despotism popular: and the first assertor of the people's rights when Bourbon stupidity had uncovered the chains his victories successfully gilded.

But he was not great! Why? Because he did not place the crown of Louis Philippe upon his own temples! Because after turning king-maker, and choosing that man for the head of the government he deemed most worthy, expectation has been disappointed in the pseudo-republican Bourbon? Because he was so true to his principles as to refuse a throne, or because he selected the wrong person to place upon it? By such reasoning thrones make men great, and the unworthiness of those in whom we trust is fatal to our own superiority of character. Lafayette was great—great in the only true sense of the term;—for real greatness, like a noble edifice or a perfect poem, does not exist in the eccentric display of grandeur or brilliancy in some of the details, but in the due proportion, the perfect adjustment, and consummate glory of the majestic whole.

For our own part, we can never listen with patience to those who delight in depreciating—to intimate the want of intellectual power, always does depreciate—the few nobly great men who live on the pages of the world, to teach us, when despairing of the onward destiny of our race, that there have been some who have dared to be honest, under all circumstances, and who have retained their benignity and love of mankind, when philanthropy became a reproach, and a byword. History will regard Lafayette as one of those immortal benefactors of our race, who have stretched their arms beyond one generation to embrace the children of centuries in advance—a living model of goodness in every age. There the honesty that rose to the dignity of heroism, and the moderation which in classic story would be dignified as the loftiest philosophy, will leave unquestioned the greatness of Lafayette.

NOTICE TO MANUFACTURERS.

SIMON FAIRMAN, of the village of Lansingburgh, in the county of Rensselaer, and state of New-York, has invented and put in operation a Machine for making Wrought Nails with square points. This machine will make about sixty 6d nails, and about forty 10d nails in a minute, and in the same proportion larger sizes, even to spikes for ships. The nail is hammered and comes from the machine completely heated to redness, that its capacity for being clenched is good and sure. One horse power is sufficient to drive one machine, and may easily be applied where such power for driving machinery is in operation. Said Fairman will make, vend and warrant machines as above, to any persons who may apply for them as soon as they may be made, and on the most reasonable terms. He also desires to sell one half of his patent right for the use of said machines throughout the United States. Any person desiring further information, or to purchase, will please to call at the machine shop of Mr. John Humphrey, in the village of Lansingburgh.—August 13, 1833. A29 if R M & F



AMERICAN RAILROAD JOURNAL, AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT No. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, Editor.]

SATURDAY, JUNE 28, 1834.

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, JUNE 28, 1834.

CHESAPEAKE AND OHIO CANAL.—The following communication gives the rates of tolls on this canal, which may be interesting to many readers of the Journal, as well as a document for future reference. We ask a similar statement for every canal and railroad in the country, and we desire it may be forwarded with the least possible delay. We promise to give an account of five, and perhaps more, to every gentleman who furnishes us with one, and to pay the postage into the bargain.

CITY OF WASHINGTON, May 27, 1834.

To the Editor of the Railroad Journal :

SIR,—I forwarded, some time since, by a private conveyance, an answer to your letter asking for information relative to the Chesapeake and Ohio Canal, which gave you such statistical information respecting that grand work as I could collect. I am not aware that it has yet reached you, though it has been nearly a month, if not more, since I wrote it. I could not then get a copy of the rate of tolls demanded on the canal, but having since succeeded, I forward them to you. This rate is only temporarily established, and it is probable, ere long, that a more favorable change will take place. Should you determine on publishing the inclosed, you will be pleased to notice the fact that this arrangement in respect to the tolls is only temporary.

Boats or scows, either empty or having cargoes, the tolls on which shall not pay 5 cents per mile, shall be charged at the rate of 5 cents per mile, and 3 per mile cents for any additional

distance, which shall be considered as in lieu of the tolls on such cargoes.

Boats used chiefly for the transportation of passengers shall pay 10 cents per mile for the first 15 miles, and 8 cents per mile for any additional distance, which shall include the toll on passengers and their customary baggage; but all other merchandize transported therein shall pay the established rate of toll.

Articles.	Quantities.	Per ton for first 15 miles.	Per mile over 15 miles.
Tobacco, - - -	per ton of 2 hhd.	2 cents	2 cents
Wheat, - - -	" 40 bushels	2	2
Flour, - - -	" 10 bbls.	2	2
Oil, - - -	" 100 bbls.	2	2
Corn Meal & Rye chop, - - -	" 40 "	2	2
Oats, - - -	" 40 "	2	2
Flax and Clover Seeds, - - -	" 2940 lbs.	2	2
Hemp and Flax, - - -	" 35 bushels	2	2
Potatoes, - - -	" 2940 lbs.	2	2
Hay and Straw, - - -	" 35 bushels	2	2
Wood, - - -	per cord of 128 c. ft.	2	1
Bark (Tanner's), - - -	" "	3	1
Lumber, Plank, - - -	per 1000 ft. bd. mea.	2	2
" Square timber, - - -	70 cubic feet	2	2
" Shingles, - - -	3000	2	2
" Laths, - - -	5000	2	2
" Barrel Staves, - - -	1000	2	2
" & Headings, - - -	" "	2	2
" Hhd. Staves, - - -	500	2	2
" & Headings, - - -	" "	2	2
Charcoal and Coke, - - -	per ton of 56 bushels	2	1 cent
Coal, - - -	" 28 "	1	1
Apples, - - -	" 12 bbls.	2	2
Cider Ale and Beer, - - -	" 8 "	2	2
Whiskey and Pork, - - -	" 7 barrels or 2 hhd.	2	2
Wine & Foreign Spirits, - - -	per ton of 250 galls.	2	2
Live Stock, Cattle, - - -	4 to the ton	2	2
" Sheep, - - -	30 "	2	2
" Hogs, - - -	15 "	2	2
Lime, - - -	per ton of 28 bushels	2	1
Plaster, Stone, - - -	" 2240 lbs.	2	1
" Ground, - - -	" 28 bushels	2	1
Stone, Rough, - - -	per ton of 15 cub. ft.	1	1
" Cut or Wrought, - - -	" "	2	2
" Grind and, - - -	" "	2	2
" Mill Stones, - - -	" "	2	2
Iron, Pls, Castings, and Bars, - - -	per ton of 2240 lbs.	2	2
Salt, - - -	" 35 bushels	2	2
Flsh, - - -	" 7 barrels	2	1
All other articles - - -	" 2240 lbs.	2	2

The above rates are established for the present for the use of the canal between the city of Washington and Harper's Ferry Falls; and the same rates per mile will be demanded for the use of any portion of the river between the Little Falls and the Harper's Ferry Falls; for the use of the river above Harper's Ferry Falls, the tolls established by the late Potomac Company will be demanded.

The canal is now in active operation, and will soon, I believe, be opened for several miles above Williamsport, where the slack water navigation of the Potomac is used, (for a distance, I think, of upwards of 7 miles,) making in all a distance, from the Georgetown basin, of upwards of 110 miles.

I have used some exertions to obtain you subscribers, and have had the promises of several

to write for your Journal. I hope the patronage of this year will be such as not only to warrant its continuance for years to come, but, at the same time also, a continued improvement in its appearance and contents, such as has marked its progress from its first establishment.

I should like you to have a copy of Dr. Wm. Howard's report on the improvement of the Monongahela River, which is, at present, a favorite project in the western part of Pennsylvania, and one which, if executed, will tend as much as any other work of internal improvement to add to the resources of that region of country, so rich in mineral and agricultural products, and where the arts have attained such perfection. Your obedient servant,

H. N. C. !

INTERNAL IMPROVEMENTS.—The Richmond Enquirer states that "the following resolution has been unanimously adopted by the Common Council of this city. They open again the great subject in which the interests of the city and of the whole State are so deeply concerned.

"The act of the Virginia Assembly, which passed the 14th February, 1834, entitled 'An act further to amend the act, entitled 'An act incorporating the Stockholders of the James River and Kanawha Company,' having continued the books of subscription for the stock of said Company open until the 31st December next, and having declared that the payment of one dollar upon each share subscribed by individuals or corporate bodies, at any time before the said 31st December, shall render such subscription valid.

"Resolved, That the Cashier of the Bank of Virginia be, and he is hereby, authorized, to draw on the Chamberlain of this city for the sum of four thousand dollars, payable the first day of November next—it being for one dollar per share on 4000 shares of stock subscribed by the Corporation of Richmond to the James River and Kanawha Company; and that the Chamberlain be directed to accept said draft, and to furnish the Second Auditor with a copy of this preamble and resolution."

A new locomotive Engine has been built at Schenectady, at the workshop of the Mohawk Railroad Company, which bids fair to excel even those of Mr. Stevenson.—[Albany Daily Advertiser.]

A COTTON FACTORY has been established at Greensborough, N. C. It has five hundred and twenty-eight spindles in operation, and is capable of manufacturing between two and three hundred pounds of thread per day.

ON THE DIP AND DECLINATION OF THE NEEDLE.

To the Editor of the American Railroad Journal:

SIR,—P. G. V., in your last number, appears anxious that the variations of the compass should be taken by practical surveyors in the United States in June and December, so that in a few years the long sought for problem may be settled. He may in a short time learn, from some observations which have been made in the city of Philadelphia, with great care, several times in the day, for nearly a year past, much of what he wishes to know; and further, that the irregular and disjointed observations of surveyors through the country, giving what they might suppose to be the correct variation of a place, could not be relied on, as it has been known to vary as much as ten minutes in half an hour. To obtain the correct variation, a number of regular observations daily for a length of time would be required, and then a few observers through the country would answer all necessary purposes.

If the writer of the following communication thinks he has reason to complain that it has not sooner appeared, he will please recollect that we too have some cause to complain—not of his communication, for we like that, and should be pleased to receive others upon the same subject, giving a complete history of the process of *railroad making*—but that he has no name or signature by which he may be known. We like to know our friends, and therefore desire that each should have a “handle” by which we can take hold of him, especially when we have occasion to “handle” him without gloves; he will, therefore, in his next, please to choose one to suit himself, or we shall have to call him the gentleman, not the “fellow,” “with the claret-colored coat,” or some other distinguished no-party man. He will also please pardon the long delay of his favor, and let us hear from him again soon.

[For the American Railroad Journal.]

In the last, having conducted our exploring party from the head-quarters, Hopelul Town, we left them, along with some of the Directors of the road, enjoying a well provided dinner at Mr. Willis' cottage.

Having finished their rustic feast, the chief, after giving Mr. Wilder his last and particular instructions, summoned the carriage, and with the former occupants, (together with Wilder,) set off at a good speed for the summit of the hills upon which they then were. Here determining the important “point de depart,” and setting down W., the chief, (Mr. Safeside,) took an affectionate leave of him, wishing, as usual, all success, &c. &c., from thence continuing on the journey to his “other railroad,” which by this time wanted his presence. Mr. Policy, the co-assistant, having had, as the sailors say, “sailed before,” knew well enough that he was losing little by being of the party that continued on. One might have almost read in the smirking looks he cast back toward Wilder, they were so expressive, embodied in words like the following: “Now, my boy, you have honor before you—amuse yourself to your heart's content—a pleasant introduction to the hemlock swamp!”

The whole party, or rather, as it was for the present, parties, had been dismissed early on the afternoon of Mr. Safeside's departure, for the purpose of giving them an opportunity to make some transitory residence sure, but at the same time with strict injunctions to appear at head-quarters early the ensuing morning.

The sun was scarcely peering from behind the thickly foliated hills in front of Mr. Willis' cottage, its beams yet playing among the

misty scuds around them in the valley, as the young engineer in vice-command rose from his cot, and summoned his aid, Moyston, to arrange the several forces as they were coming in along different paths to the quarters. The bustle of presenting themselves, the ringing of the chains, resounding blows from the axes and hatchets in trying them, and now and then the merry peels of laughter among the men, was an amusing and novel sight to the cottagers, as well also to the little paradise of nature around.

The well provided breakfast over, commenced the final disposition of axes, hatchets, levelling rods, pike staffs, chains, stretchers, (for the chief never would have these left behind, even though measuring in mire waist deep,) tripods, and, although mentioned last, of the most importance to old Hardy, the surveyor—the dinner basket: all these to their respective and jealous bearers.

First in the procession, as it turned in a shrubbed lane leading down in the valley, was the short and rough looking Hardy, (you well remember his grotesque squab figure, and merry Hogarth face,) with his white staff and glittering brass circumference, or ‘compa’s,’ as he termed it, followed by two or three flag-men, with bright hatchets, tastefully slung in leathern belts, nicknamed by their facetious leader “knights of the red,” of the “yellow,” or of the “white,” according to the tints of their several flags. Next were four stout and heavy built chain bearers, with their new shining (for this day) chains, borne by the “hind-men,” and the “pins” and vermeil colored tallies by the “fore-men,” with hatchets also slung by their sides; after these followed some six or seven “axe-men,” with ponderous and new axes thrown across their brawny shoulders; and immediately joining, the “rod-men,” with their long white and graduated rods, with bright brass ends, and tastefully colored vanes—these the most important characters of the “force employed.” The rear was brought up by Wynn, who, by some unknown means, had contrived to get a hatchet, and not being equally successful in obtaining a belt, he had rigged across his side a sheath made from a purloined end of Mrs. Willis' clothes line. Ambitious also of an honorary badge, we had folded up two or three sheets of paper and tied them around his neck with a piece of red tape; to look as near as possible like the field-books of Moyston, Mr. Wilder, and his surveyor, Hardy. Hardy, who was famed for his knowledge of “blazed faces,” of old decayed and antiquated “line trees,” and highly conversant in determining overgrown and illegible “line letters,” was to appearance the greatest character in the whole party. Intimately acquainted with the country to be explored, and having made his appearance strongly backed by one of the most influential directors, he came with peculiar grace into the party; and surely, we cannot covet him his feelings of “elevatedness,” (his own words)—they were innocent; his sudden dignity was inspiring; it was harmless, too, for it was the very summit of his hitherto ambitious dreams; and we were about to say, of course—his happiness was complete. Moving on, as was observed, at a quick pace, Hardy soon found the spot that had been described to him, and was just setting his staff in rest as Mr. Wilder commenced the work of the day. Returning after a short examination of the swamp, (for it was a dense hemlock morass through which they were to run their lines,) he began by directing Hardy where to place his compass, arranged the chain-men, and placing his level upon the tripod, made some few more hasty observations; then, taking the flag-men with him, plunged boldly into the dark marsh, having previously given some instruction to Moyston, who remained by the level, respecting the men that were left behind to cut “stakes,” &c. Wynn following, was shown, as they proceeded, where to station the axe-

men, at a certain number of paces from the beginning,—if, indeed, paces could be determined in striding thus ridiculously through the mire. Following the course of a little rivulet, that struggled along murmuring through the roots of the giant trees, the young engineer came to the point he had marked out the preceding afternoon, as the most feasible course for the all-important “main line.” Stationing a flag at the point for direction, he gave the remaining force orders to transpose themselves at about equal distances apart, as near as possible in a line with each other, stretching in a direction toward the “white” and “yellow” (flags), that were now to be placed by him immediately between the places mentioned, which at last, by dint of much noise, bruised shins, (we would really not have this terming considered a *vulgarism*, but must absolutely confess we know of no other word by which we could express this *tender* and important, not to mention *prominent*, feature of the human frame, and as we would speak *feelingly* when adverting to it, must remain our only claim to justification,) endangered necks, and great hal-loo-oo-ing, he placed the flags as near the line as circumstances would allow. Then dropping the axe-men in such a manner as to give present satisfaction, orders were given to “clear the way.” “Hal-loo men, sweep clean the underbrush.” “I’ll take this tree.” “You fall, too, upon that pine,” and like observations. Hardy, incensed at some one for not chopping exactly as he wished, fell to, himself, so lustily and so furiously, that, unluckily, by a slant blow, nearly severed one of the chain-men's arms off. A momentary confusion succeeded, but soon all were busy again; and as the lusty axe-men spent their full efforts in vigorous blows upon the deep resounding hemlocks, the high hills and impending rocks along the valley echoed back the fast falling strokes, which in their turn were again sent back—and on—and back—and back—fainter—fainter—till beyond the power of hearing. Then the loud, deep, lengthened crash of some giant tree, falling beneath united efforts, and adding its own resilience to the elastic earth, would shake around, the noise swamping like the pealing of thunder along the echoing mountains, reverberating from cliff to cliff.

Thus having made the first bold stroke, returning to the compass he directed the view toward the far distant flag, then setting down the bearing of the line, notwithstanding Hardy's desire to dispute with the assistant about a second or two, or something still nicer in the point; and after giving a few necessary but here unimportant orders, he requested the surveyor to keep just ahead of the level, and exactly upon the same course, till further orders: at the same time pointing out some objects to be observed, &c. &c. Thus far having suited his mind, he commenced levelling over the cleared way. Here, if you had approached the opening that was made through the thick trees, and as you directed your view down the narrow vista, you would see, at perhaps a considerable distance off, a flag-man standing upon a prostrate trunk of tree, or some other elevated spot, with a soon observed red, or white, perhaps yellow flag, dwindled to a mere spot, moving above his head; again, if attentive, you would catch a glimpse, and now lose it; then, perhaps, in the same line, you would see a different color resting upon the dark green foliage, will-o'-wisp like also, caused by the waving motion of some heavy intervening tree, at whose base the resolute and destructive axe was busy: perhaps as the rays of the sun, now approaching the meridian, found their way through the opening foliage, a gleam of reflected radiance would circle upon the polished plates of the instruments, or, may be, like a bright star upon the brass tipped levelling rod. Here you would see some lusty fellow drawing his midly chaining course through the expressively termed “bad spots” in the swamp:

no way, as Cooper's scout says, "to circumvent the evil," for the line must be measured, and the line must be cleared, every one's road sooner or later leads over the same way.

Do you see those fellows following just after little Hardy with his compass? That unfortunate one, (a fore chain-man,) throwing his arm about, (especially as he is out of hearing of the level,) is venting his curses at some innocent root that his chain has got "locked" into: now twitching it with a broad and vigorous sweep, he calls down upon his head the imprecations of the "hind-man," for pulling "his end" into a worse state than the fore-man had just unlocked his own from. Then again, as you saw the flags dancing and dodging among the trees, keeping motion with their bearer's gait, you might hear Mr. Hardy's loud clear voice, "Lo-oo the red—fifty feet e-e-a-st"—"way ten more;" then in a louder and more agitated manner, "where the d—l are you going; ba-a-ck twenty!" "Hold, you gander—ho-o-o-l-d there!"—"Steady so!" and then came the deep collected "down!" This was followed by the mid-man's "east-er," and "we-est-er," and "taut! down! on!" The axe-men's incessant blows, Mr. Hardy and his hind-man's "Lo-oo-os" and "wa-a-a-ys," and the running to and fro of men, gave the scene you beheld quite an animated appearance. It was seldom that you heard the young assistant's voice among the din of the scene; sometimes, however, as he looked far up the line, an undue jerk of the chain, or the chilling sound of an axe falling upon a stone, (none, however, who know not the value of a good axe, can comprehend that chilling sensation,) would call forth the sharp and clear "hal-lo there, you Jones, or you Stephen!" (addressing the person,) "Moyston, that man must be remembered." These words, although slight, were perfectly intelligible to whom they were meant for. To be sure, you would also hear the "up!" for dinner, and the more gratefully sounding "put up!" at night.

RAILROAD ACROSS THE ISTHMUS OF DARIEN.—

We perceive, by the following extract from a Panama paper, that this great enterprise is likely to be undertaken under highly favorable auspices. The results to commerce, from the establishment of a land carriage of this description, between the two great oceans, cannot fail to be of a highly important character.

"To the Deputies of the Provincial Assembly of Panama:

"Gentlemen,—The opening of a carriage road or railway from the Atlantic to the Pacific, has for a long time engrossed the minds of many persons, not only in this capital, but in far distant countries; for knowing the important situation of this province, it is impossible not to conceive the advantages that would accrue, should this new path be opened to general commerce. Such a flattering idea had given rise to various projects to carry this grand work into execution, which have not been realized, perhaps from the lack of a perfect knowledge of the localities, or from a want of sufficient funds, or may be from the political vicissitudes that the country has been subjected to of late. But now that we have fortunately acquired the re-establishment of the empire of the law, and tranquillity has been pretty well secured, I believe that an impulse ought to be given to this interesting undertaking, upon which depends almost the absolute vitality of this declining province.

"With such an object in view, I take the liberty of soliciting that there be granted to me an exclusive privilege, on the same terms that the old chamber of the district granted to Mr. Malcolm McGregor, that I might endeavor to get this project put into execution, not doubting that the honorable chamber will receive and protect my request; and being penetrated with

its justice and public convenience, will decree favorably.

"Panama, October 2, 1833."

Some days ago, we published an extract from the "Constitucional de Cundinamarca," concerning a project to open a more secure and speedy commercial communication across the Isthmus of Panama. Since then a Panama paper has fallen into our hands, from which we have derived more authentic information regarding this most interesting enterprise. From it we have translated the memorial of Mr. Paredes, which is prefixed to this article. In the same paper, the provincial decree, granting the privilege to that gentleman, also appears, along with a copy of the former one granted to Mr. McGregor. The new decree contains some slight modifications of the articles of the old; one of them is, that the road shall reach to the city of Panama, and another, that Mr. Paredes is not bound by the old decree, which only allows two years to carry the project into execution from the day of its passing, otherwise it becomes null and void, but that the new patentee is not bound, nor does he enter into the enjoyment of the privilege until the day that the Governor of the province shall communicate to him that the decree has been approved of by the National Congress.

We feel a considerable degree of pleasure in giving publicity to the Memorial which Mr. Paredes presented to the Provincial Chamber, and which is submitted for approval to the National Congress of New Granada, now sitting, and we cannot for a moment doubt that body will receive kindly a project upon which depends the future happiness, not only of the Isthmus, but also of this Island; for when once such an expeditious communication between the Atlantic and the Pacific shall be opened, will the navigation round Cape Horn be tasked, which causes so many dangers and loss of time? Certainly not: for the general deposit will be in this island, from whence will be dispatched the cargoes for the ports in the Pacific, which are now supplied by vessels round the Cape.

It has been also very satisfactory to us to learn that some of the respectable merchants of this city have offered their support to Mr. Paredes, to carry this great work into operation, assuring him that in London a great many more will purchase shares in the company, which, added to those in Jamaica and Panama, will form a sufficient number for the execution of the project, without even counting upon the capitalists of France and the U. States.

We understand that the concessions in favor of the Memorialists could not have been more munificent, whether we consider the extending the privilege to the long period of forty years, or whether we consider the permitting of the exclusive transport of all kinds of merchandize, produce or metals, in carriages belonging to the company. These are truly powerful stimulants, to induce the European and American capitalists to take a considerable share in an enterprise which offers such incalculable advantages. The most authentic accounts that have reached us state that the distance from Porto Bello to Panama is only 14 leagues, and that the expense of putting the plan into active operation will cost nearly half a million of dollars.

The good reputation of Mr. Paredes, his commercial relations with this city, the facility with which he expresses himself in different languages, added to his honorable character and personal activity, incline us to augur well of the undertaking, whilst the grandeur of the enterprise makes us quite sensible of his patriotism, his judgment, and the knowledge which he possesses of the important situation of his country. If every Colombian thought as he does, that country would soon prosper, and instead of civil war and intestine quarrels, peace, good order and tranquillity, and industry, would be established upon the firmest basis.—(Kingston, Jam. Chronicle.)

On the subject of the proposed communication by steamboats between Calcutta and England, the Calcutta Courier of the 23d January has the following paragraph:

STEAM COMMUNICATION WITH ENGLAND.—Capt. Ross has proceeded to Socotra in the pilot brig Henry Meriton, taking with him Capt. Jump, who, we believe, will return in charge of the vessel. Capt. Jump is spoken of as likely to be the future commander of the Forbes on her trips to the Red Sea, for which he has tendered his services. In the mean time, arrangements are making to forward coal to the several depots. The Fette Salem is now receiving 500 tons of English coal for Judda, at the freight of 27 rupees per ton,—a very low rate compared with the terms on which the Red Sea depots were provided for the Hugh Lindsay. A suggestion of Capt. Ross is now under the consideration of the committee, to anticipate the departure of the Forbes on the first trip, by altering the date to the 20th April instead of the 1st May, as lately announced. The motive for the alteration is, that starting on the 20th of April, it is believed that the steamer will be able to get down the bay and clear of Ceylon before the earliest period at which storms are to be apprehended.

We understand that the Merchants' Steam Committee have given in a plan to government, offering to undertake to keep up a quarterly communication with England by the Suez route, both from Calcutta and Bombay, with four large steamers of 800 tons burthen, each of them furnished with a pair of 100-horse engines—one of the steamers to run from Bombay, two from Calcutta, and one between Alexandria and the British Channel,—provided government will give them five lakhs annually in compensation for carrying the mail and all public dispatches.

NATURALIZATION OF FISHES.—At a late meeting of the Zoological Society, were read two letters from Mr. J. B. Arnold of Guernsey, detailing his experiments in the naturalization of sea fishes in a lake chiefly supplied with fresh water. The area of the lake is about five acres; its depth various; and its bottom also various, being muddy, gravelly, and rocky. The water is, during nine months of the year, drinkable for cattle, but in consequence of a supply which it receives through a tunnel communicating with the sea, is rather salt in summer, at which season the fishes do not come down so plentifully as at other times. The fishes introduced into the lake have been the grey mullet, sole, turbot, brill, plaice, bass, smelt, and grey loach. All of these have thriven well, and are believed to have increased in numbers; the grey mullet especially is known to have bred as freely as in the sea itself. A single whiting having been caught for three successive years, was found to have grown considerably; a pilchard also thrived well. All the above-mentioned fishes were placed in the lake, except perhaps the brill; but others, as the silver bream, appear to have introduced themselves. It is even suspected that hybrid fishes have been produced, as several have been caught which were unknown to persons well acquainted with the species usually met with on the coast of Guernsey. Mr. Arnold adds that sea fishes, after having been naturalized in his lake, have been transferred to ponds of spring water, where they have not only lived, but done well; and that such naturalized fishes have been carried to a long distance, being much more tenacious of life than those caught in the sea.—[Proc. Zool. Society.]

QUIETUDE.—Happy, indeed, would be the condition of mankind, were all disposed to cultivate that harmony and friendship so desirable and necessary to the welfare and prosperity of society—the world would be similar to a paradise, and the people, if not angels, would approach the character ascribed to them—mankind, as they ought to be considered, would present a band of brothers, happy, quiet and

content. Our citizens, from the highest to the lowest, would be satisfied with their respective stations, and the agitation which now pervades society would rest in quiet and repose.

If there is any quiet on earth, the farmer may be said to enjoy it: with a competence in store, the honest fruits of his industry, he thrives secure from the turmoils of those who pursue other avocations for subsistence. The mechanic, the professional man, and all who support themselves by speculative measures, must expect to contend against the current of disappointment, and prop their sinking hopes by anticipating future prospects, and although their situation may appear enviable to the unscrutinizing eye; on the contrary, they have abundant reason to envy those who live on the fat of the land, enjoying the bounties dealt out by Nature with a liberal hand.

To JOHN O. N. RUTTER, *Wine Merchant, for his Invention of an improved Process for generating Heat, applicable to the heating of Boilers and Retorts, and to other Purposes for which Heat is required.* Sealed March 30, 1833.

The subject of this patent is the employment of bituminous, resinous, or oily matters, in connection with water as a combustible material, which, it is said, will produce a fuel for furnaces, boilers, &c. capable of giving out a very intense heat. Strange as the suggestion of applying water as a combustible material may appear, it is reported to have been found extremely advantageous, economical, and convenient. We of our own knowledge can say nothing upon the subject, but merely give the patentee's views and recommendations in reference to the manner in which he proposes to employ those materials for the production of heat.

Bituminous, oleaginous, resinous, waxy, or fatty substances, are to be employed: as coal tar, which is to be combined with water in certain proportions. It is proposed that a stream of coal tar shall be allowed to flow from a reservoir through a pipe with a stop-cock, and likewise a stream of water from another reservoir through a similar pipe; that the two streams shall meet, and fall into one general receiver with a funnel tube, by which they may be together delivered into the furnace.

The proportions are recommended to be one gallon of coal tar to one gallon and a half of water, the flow of the two liquors to be regulated by suitable apertures or stop-cock. These quantities of materials are to be slowly discharged from the funnels that the whole shall occupy from two to three hours in its delivery into the furnace; and where the furnace is of such magnitude as to require it, several of these funnel tubes may be employed, each delivering its supply of materials in the proportions and times stated.

It is not necessary to use water in a pure state, to be mixed with the coal tar, as foul water will answer the purpose equally well; and on ship-board, where the invention may be usefully applied to steam navigation, the bilge-water from below, or sea-water, may be pumped up and employed for the purpose, and on land the ammoniacal liquor from gas works will also suit as well as fresh water.—[London Journal.]

STEAMBOAT TRAVELLING.—The cabins of western steamboats present peculiar aspects. They possess all the splendor and comforts of an eastern boat, and afford other pleasures which we meet with nowhere else. A per-

son embarking on a steamboat generally expects to remain on board for a longer time than is necessary to perform the trips elsewhere. He prepares himself for the formation of new acquaintances. The boat gets under way, and no one holds himself aloof from the advances of his fellow voyager. A feeling of general interest is soon acknowledged and felt. Intimacies are entered into, and each one contributes from his own resources to the general fund of amusement. By this means the hours are beguiled of their weariness, and that, which under other auspices would be tedious, becomes a source of pleasure.

But the most inveterate talkers will tire. Recourse must be had to other resources. If the voyager has been considerate, and supplied himself with those mute, yet ever interesting companions, agreeable books, he is at no loss. But if he have not prepared himself with a shield against the attacks of enemies he is in a pitiful condition. He lounges about the cabin—promenades the guards—gazes at the sublime scenery of the river hills—and eventually, in a fit of desperation, throws himself into his berth, and seeks in the oblivion of sleep, to forget that he is a bore to himself. Perhaps an ingenious companion who is similarly conquered by dullness, devises an expedient for relief. Gaming, we are sorry to say, is much too common; and no one must consider a proposition to have recourse to that dernier resort of dullness, as any other than a genteel proposition. A proposition is made that the tedium of the hours be lost in the excitement of the card-table. Such propositions are frequently acceded to.

Now, we believe many can date the commencement of their sinning in this way from a vacant hour of steamboat travelling. A taste for such excitements has thus been originated, which has eventuated in the moral degradation of its victims. If any expedients can be adopted to guard against such occurrences, they should be entered into by such as are desirous for the welfare of their fellows with alacrity.

An interesting book, by affording agreeable entertainment, would preserve the mind from the dreary inaction of lassitude. The sickly feeling of satiety is exceedingly propitious for the advances of vice. No man when under the influence of a healthy intellectual activity wishes for change. It is in those moments when that by which we are surrounded fails to yield us pleasure, that we sigh for change, and are most liable to listen to the voice of the tempter. The seductions of vice are yielded to, and inroads are made on our moral principles. The enemy once having got possession of our bulwarks, our condition is exceedingly precarious.

Under the weight of such considerations, we plainly discover the great utility of healthy excitement. If each steamboat possessed a small library of well selected works, a pleasant resource would be afforded. The expense would be but small. The advantages would be great. A steamboat with a library on board, would be preferred by every sensible man, to one which was unprovided with books. We commend the consideration of these suggestions to those engaged in fitting up steamboat cabins, and who are disposed to lessen the evils of humanity.—[Cincinnati Mirror.]

SHEET IRON GIGS.—These gigs are continuing to grow as rapidly numerous as they are increasing in public estimation. A very beautifully fitted up one was this week finished by Messrs. Reid and Hanna, and Messrs. Walker, for the Paisley Canal. Two others are in a state of great forwardness for Dublin; and several others, for various canals, are also in preparation. This business of gig making has extended to Johnstone, also, where there are six or seven of them getting forward for various canals both in Ireland and Scotland. Steam-coaches will find in these gigs most powerful competitors to contend with.

The increase of trade upon all the canals on which they have been introduced is quite astonishing. The bustle at the basin here and at Port Eglinton, by the hourly departure, is quite enlivening, and we understand the travelling by the Forth and Clyde Canal is increased in a most astonishing degree. Indeed, from the speed they have attained, and the low prices charged to Edinburgh, Stirling, Alloa, &c. no other result could be expected.—[Paisley Advertiser.]

MONTHS.—This division of the year appears to have been used before the flood; and as it is naturally framed by the revolutions of the moon, the months of all nations were originally lunar, that is, from one new moon to another. In a more enlightened period, the revolutions of the moon were compared with those of the sun, and the limits of the months, as the component parts of a year, were fixed with greater precision. The Romans divided each month into *Calends*, *Nones*, and *Ides*; the *Calends* were the first day of the month, the *Nones* were the seventh, and the *Ides* the fifteenth of March, May, July, and October; in the other months the *Nones* fell on the fifth, and the *Ides* on the thirteenth. The days of each month, according to this form, were counted backwards; thus, the 18th of October was called the 15th day before the *Calends of November, &c.* In the year 1793, the French Government had a new calendar constructed, in which they adopted the following fanciful designations for each month:

French.	Signification.	English.
AUTUMN—		
1. Vindemaire,	Vintage month,	from Sept. 22
2. Brumaire,	Foggy month,	Oct. 22
3. Frimaire,	Frosty or sleety month,	Nov. 21
WINTER—		
4. Nivose,	Snowy month,	Dec. 21
5. Pluviose,	Rainy month,	Jan. 20
6. Ventose,	Windy month,	Feb. 19
SPRING—		
7. Germinal,	Springing or budding mo.	Mar. 21
8. Floreal,	Flowering month,	April 20
9. Prairial,	Hay harvest month,	May 20
SUMMER—		
10. Messidor,	Corn harvest month,	June 19
11. Thermidor,	Heat month,	July 19
12. Fructidor,	Fruit month,	Aug. 19

This new calendar, which, after all, was only a plagiarism, or copy of one used in Holland from time immemorial, like many of the absurd institutions which sprang from the French Revolution, was laid aside in a few years, from the circumstance of its utter unfitness for the seasons, even as they occur in the several provinces of France itself; how much less applicable, therefore, must they have been to other countries, where the climates and seasons vary so much from each other! A calendar, to be worthy of universal adoption, must be capable of universal application. Not so that of the French *Philosophers*, which, independently of its discordance with those of all civil-

* Noah, as we find it recorded in the Bible, reckoned by months of thirty days each; and from him that mode of computing the year is supposed to have been adopted by the Chaldeans, Egyptians, and other Oriental nations.

ized nations, had not even the merit of indicating those very seasons from which it professed to derive its character. The late Mr. Grifford ridiculed this new-fangled method of registering time by the following ludicrous but happy translation of the republican months and seasons:

AUTUMN . . . Wheezy, sneezy, freezy;
WINTER . . . Slippy, drippy, nippy;
SPRING . . . Showery, flowery, bowery,
SUMMER . . . Hoppy, croppy, poppy.

MACHINE FOR MAKING BRICKS.—Messrs. Harkness, Sawyer, and Frelove, have now in successful operation a machine which has excited the admiration of all who have witnessed its operation. It produces twenty bricks in a minute, and these too, not the unshapely and rough masses of mud, which we usually call bricks, but a square and smooth body of clay, so hard, when they leave the press, that they are fit to set immediately into the kiln for burning.

The moulds (four in number) in which they are pressed are made of polished steel plates—which plates are set in a cast iron box; and the whole banded with strong wrought iron bands. The machinery is so constructed that the mould is fixed in a solid stationary frame; and after the pressure is made upon the clay in the mould, the bottom of the mould rises, and throws the brick to the top, so that it may be conveniently taken off. It is found by experience, that not less than 50 tons pressure upon each brick will answer the purpose. This amount of pressure is, of course, wanted only at the very last moment of the impression; or, in other words, can be pressed with very little effort into a space within, say, one-fourth of an inch of the proper thickness. After it is thus far pressed, it then requires at least 50 tons to bring it to a proper degree of density. The machine in question is so constructed as to give this great pressure at the time it is wanted, and no other. In fact, it would be difficult to find, in all the mechanical operations now in use, a more perfect adaptation of the means to the end. And it is thought by many scientific gentlemen, who have examined the matter, that no other application of the mechanical powers will ever be made to effect the same object.

It is only necessary that the utility of this machine should be known, in order to introduce it into general use. The beauty and durability which it will impart to the brick buildings of the country must make it an object of great public interest. Add to this, the reduction of expense which must ultimately follow, and I cannot but regard the improvement of the gentlemen above named as of equal importance to any which has been introduced for the last 20 years.

The following practical statement, which has been obtained from the patentees, will no doubt interest such of your readers as are engaged, or may feel disposed to engage, in brick making.

A brick press can be put in operation for about \$6.

The expense of carrying on the business for a month is as follows:

1st. 6 hands at \$10 per month - - \$60.00
Boarding same at \$1.25 per week, - 30.00
2d. 3 boys at \$6 per month - - 18.00
3d. 2 horses at \$15 per month, - 15.00
4th. 60 cords of wood at 90 cts. per cord, 54.00
The setting and burning of 180,000 bricks, at 40 cts. per 1,000, - 72.00

\$249.00

The above are the regular expenses per month of carrying on a horse power press. The press, when in operation, makes 20 bricks in a minute, or 2,000 in 8 hours. Deducting, however, for loss of time and other contingencies, 1-4th for every day's work, leaves the amount of 7,500 bricks per day, or 180,000 per month; which, at \$3.50 per 1,000, are worth \$630.00. Deduct the expense of making which is 249.00 and there remains a clear profit to the owner of \$381.00.

per month; or, \$1,905.00 for 5 months, the time that could be conveniently occupied each season in brick making.

The above estimate is based upon the price of brick, of labor, and of boarding at Mount Vernon. In many places, labor and boarding would doubtless be more expensive. But in such places, the price of brick would probably be increased in proportion.—X. Y. Mount Vernon, May 15, 1834.—[Ohio State Journal.]

AMERICAN TONNAGE.—From the Report of the Secretary of the Treasury recently made to Congress, the Registered, Enrolled, and Licensed Tonnage of the United States amounts to 1,439,450 21.95 tons, divided among the States and Territories as follows:

	Tons.
Maine,	192,714 63-95ths
New-Hampshire,	17,126 54 "
Massachusetts,	395,924 23 "
Rhode-Island,	40,907 22 "
Connecticut,	52,878 79 "
Vermont,	1,531 4 "
New-York,	319,209 80 "
New-Jersey,	33,143 53 "
Pennsylvania,	88,162 11 "
Delaware,	13,265 64 "
Maryland,	80,705 70 "
District of Columbia,	17,225 3 "
Virginia,	43,877 55 "
North Carolina,	32,142 17 "
South Carolina,	15,560 75 "
Georgia,	8,651 45 "
Ohio,	9,683 72 "
Tennessee,	3,047 1 "
Michigan,	1,753 74 "
Alabama,	7,210 31 "
Mississippi,	925 43 "
Louisiana,	61,171 73 "
Florida,	1,911 28 "
Key West,	1,091 72 "

It will be seen that New-England owns nearly one half of the whole tonnage of the country. Massachusetts owns more than one-quarter, and has the largest amount of tonnage of any State in the Union, having upwards of twenty-six thousand tons more than the State of New-York.

We give from the same Report a view of the tonnage for each year from 1815 to 1832 inclusive. It will be seen that from 1828, the date of the Tariff law, to 1830, there was a very extraordinary falling off of the shipping interest; and that in 1831 and 1832, after the opening of the West India Trade, and the settling of the tariff question, there has been a gradual increase.

	Tons.
1815,	1,368,127 78-95ths
1816,	1,372,218 53 "
1817,	1,399,911 41 "
1818,	1,225,184 20 "
1819,	1,260,751 61 "
1820,	1,260,166 24 "
1821,	2,298,958 70 "
1822,	1,324,699 17 "
1823,	1,335,565 68 "
1824,	1,389,163 2 "
1825,	1,423,111 77 "
1826,	1,534,190 83 "
1827,	1,620,607 78 "
1828,	1,741,391 87 "
1829,	1,260,977 81 "
1830,	1,181,776 43 "
1831,	1,267,846 29 "
1832,	1,439,450 21 "

[Boston Post.]

TEXAS—Brazoria.—This town is located upon a wooden elevation of peach-land, as it is termed. The spot was chosen as the most commanding and healthful, besides commanding other advantages. One street stretches along the river Brazos, and one parallel with it further back, while other streets, with trees still standing, are laid out to intersect these at right angles, to be cleared as the wants of the citizens may hereafter require. A speedy settlement is calculated upon with perfect cer-

tainity. The first tree was cut in the year 1828, and the town now contains several hundred inhabitants. Such is the increase of population, that some families are obliged to camp out, for want of better accommodations. Mrs. Holley, in her interesting "Letters" from Texas, written two years since, says there is a great want of mechanics, none being there except carpenters. The town is thirty miles from the mouth of the river above mentioned. It contains a good boarding house, the proprietors of which are from New-York. A gentleman, graduated at Yale College, has opened a school, in which the higher branches of education are taught.

Honey Tree.—By these is meant hollow trees, in which the bees deposit their honey. They are very abundant, and honey of an excellent quality, and in any quantity, may be obtained from them. The employment is very profitable. The wax thus obtained is a valuable article of commerce in Mexico. The hunters frequently throw aside the honey, and save only the wax.

Texas is divided into three distinct tracts—the level, the undulating, the mountainous or hilly. The whole coast is level, but free from marsh. A belt of prairie, about ten miles wide, extends along the coast. Back from the prairie the land is heavily timbered with pine, ash, cedar, cypress, and other forest trees. The alluvial bottom lands of the Brazos, San Bernard, and Colorado, are from three to twenty miles wide. They are heavily timbered with various kinds of oaks, cedar, pecan, elm, mulberry, and other forest trees common in the alluvions of the Mississippi.

There is an immense cane-brake, as it is termed, extending along the Cane-brake creek seventy-five miles, and in width is from one to three miles. The Colorado and Brazos rivers, which were swollen by the spring and autumnal freshets, are of a deep red and very turbid. Three thousand pounds of seed cotton and seventy-five bushels of Indian corn are an average crop on the alluvions, which are easily cultivated. One of the branches of the Brazos river is salt, and the land bordering on this river has a fertility (owing to this circumstance) which is truly extraordinary. The alternate deposits of the salt and fresh branches form a soil of a light reddish brown color, impregnated with salt and nitre. The whole valley of the Brazos is what is called mulatto soil, and is the best in Texas. The earth, when brought up to the surface from a depth of twenty feet, will yield as good crops as the surface itself.

Ten miles from the town of Bolivar there is a tree which measures 19 feet in circumference. The country between the rivers and creeks is open, level, rich, and elevated prairie, colored with luxuriant grass, and nothing can surpass these vast natural meadows. Even in the winter season, the pasture is sufficient to dispense with feeding live stock. On many accounts the prairies are deemed more valuable than the alluvial bottoms for cultivation. The soil of the prairies is a deep black mould, mixed with sand in various proportions.

Of the settlements, besides Brazoria, a town has been laid off at the mouth of the Colorado, called Matagorda, and is destined to become the depot of the Colorado, and of an extensive fertile country.

Above the level region, the country becomes undulating. This kind of land extends in a northerly direction up the Colorado, Brazos, and Guadalupe rivers, from 150 to 200 miles above the level region, and reaches to the mountain range of Texas. This undulating section is deemed as desirable a residence for man as can be found on the face of the earth. It is bountifully watered, abounding in bold rivulets and springs of the purest water. Successful experiments have been made on these undulations, of wheat, rye, oats, flax, &c. Lime stone and building stone in abundance. Indigenous grapes of various sorts grow in great profusion, and natural vineyards await the hand of the vine dresser.

Attempt to assign the Cause of the Spontaneous Combustion of Charcoal. By Mr. JOHN DAVIES, Member of the Wernerian Society of Edinburgh, &c. and Lecturer on Chemistry, &c.

In the above interesting paper, no attempt has been made by the author of it to furnish an explanation of the phenomenon which he has established and described; and as every inquiring mind will direct its attention to a rationale of the operation, I presume that some remarks which have occurred to me within the few last days, and which may at least supply some aid in the discussion, may be without impropriety appended to the paper. These remarks, though theoretical, are countenanced by experimental analogies, which, if they fail to establish the accuracy of the speculation, may, at least, excuse its introduction.

A statement of the mode in which the charcoal in question is made, will be necessary in the subsequent explanation. Small fragments of wood, generally stripped of their bark, are put into iron cylinders, and exposed to intense heat, in order to effect the distillation of the volatile constituents for the manufacture of iron liquor. Now, Mr. Brunner resorted to a similar procedure in obtaining potassium from potash and charcoal; and as we know that potash may be procured from the wood employed by Mr. Hadfield, we have in his manufacture the same operation and the same materials as in M. Brunner's experiment, and may therefore expect the same results. The only difference would be, that as M. Brunner used much potash, he procured a large proportion of the metallic base; while in the other case the potassium must be in small quantity, because all the potash present would be only that supplied by the wood subjected to distillation: and yet, upon the whole, the quantity extracted under the latter circumstances is not inconsiderable; for it is by the combustion of such wood in America, where it is of comparatively little value, that the potash is principally formed which is consumed in the arts and manufactures in every part of Europe.

It is manifest, therefore, that in the formation of Mr. Hadfield's charcoal, potassium must, in small quantities, be liberated.

Supposing the presence of potassium in fresh charcoal to have been established, we have now to explain its operation; and this appears to be effected upon the assumption that the metal lingers in the pores of the charcoal, incased, as it were, in the substance, until it be at length exposed to the action of atmospheric air and aqueous vapor. This view of the subject derives plausibility from the facts, that the combustion does not commence at any considerable depth below the surface; and that when a thermometer is introduced into the mass, the ignition generally originates in that place; that is to say, the combustion occurs exactly where it might be expected, since it takes place at the part which, favorably situated, is most exposed to the action of the supporter of combustion.

This general view of the spontaneous combustion is directly countenanced by the excellent paper of Colonel Aubert, inserted in the "Bulletin des Sciences Militaires" for January, which Mr. Hadfield has offered me the opportunity of consulting. This ingenious foreigner shows by a number of decisive experiments, that the absorption of

air and moisture is indispensable in the production of the phenomenon. He proves also, (what Mr. Hadfield has in a different way very clearly confirmed,) that no carbonic acid is formed before the incandescence occurs—a fact strictly in accordance with the hypothesis which I have offered; since upon this hypothesis the oxygen of the air, instead of forming an acid with the carbon, produces, by its superior affinity, an alkali with the potassium. The next position which he establishes, is that the carbon increased in weight in proportion to the quantity of air and moisture absorbed; and this should, according to the explanation suggested, occur, the alkali formed being much heavier than its metallic base. It appears that, to produce the ignition, the charcoal should not only be reduced to powder soon after its formation, but that the sooner it is so reduced the more certain and considerable will be the effect. Now, this fact also is entirely consistent with the explanation, because, when the pulverization has been delayed, air and moisture will have gradually produced the alkali, by a process imperceptible, because the minute portions of potassium would be at comparatively distant intervals from each other, and thus would not be in sufficient quantity at any one place to produce a sensible effect.

Colonel Aubert pulverized a mixture of coal and sulphur, and he found that under these circumstances no ignition ever occurred. The reason is obvious: for the potassium, which has been conceived to be the cause of the combustion, entered during the trituration into combination with the sulphur.

He also triturated charcoal with nitre, and he again found that the spontaneous combustion was prevented. Now nitre, by mingling with the potassium, would check its too rapid absorption of oxygen; and the effect of his experiment is in this way sufficiently accounted for.

The presence of the potassium seems to account for the circumstance, that when charcoal is moistened and subjected to heat, carburetted hydrogen is set at liberty. In this instance it would appear that the water is decomposed, the hydrogen evolved, and the oxygen united with the potassium to form the alkali. If the heat be continued, carbonic oxide would be evolved; the oxygen absorbed in the first part of the operation being again detached from the metallic base. Now this explanation corresponds precisely, I believe, with the order in which, in such an experiment, these gases are produced.

All these circumstances observed by Mr. Hadfield and Colonel Aubert appear, therefore, perfectly reconcilable with the supposition that the spontaneous incandescence is owing entirely to the oxidation of the potassium liberated from the wood during the manufacture of the charcoal.

Dr. Thompson, in the second volume of his History of Chemistry, published since my paper was read to our society, has thrown additional plausibility upon my explanation, by his attempt to show that phosphorus owes its property of catching fire, when in contact with oxygen, to a little potassium, which is reduced to the metallic state during the formation of the phosphorus.—[Phil. Mag.]

STEREOTYPE METALLOGRAPHIC PRINTING.—By Dr. Alexander Jones, of Mobile, Alabama.—I offer this name, as I have nothing

better to designate it. It means simply the transferring of printed letters, from the pages of a book, or newspaper, to the polished surfaces of metallic plates, especially of soft iron. My experiments are not yet completed, yet I feel satisfied that the result is entirely a practicable one, if carefully conducted with proper instruments.

The best plan on which to conduct the experiment is as follows: Take two plates of very soft iron, of moderate dimensions, give one face of each a very true and fine polish, so that, when applied by these faces, they shall uniformly fit and adhere together. Moisten two slips of printed newspaper, or parts of a leaf from a book, of the size of the plates, apply one to the polished face of each plate, and interpose between them a fold or two of silk paper, and then clamp the plates together. Give them a gentle heat over the fire, then place them in a vice, and apply a strong screw power. On separating them and gently removing the paper, the letters will be seen, distinctly formed on the faces of the two plates. Now, as printer's ink is formed of lamp-black and oil, upon which acid acts very little, the faces of the plates may be slightly touched over with diluted sulphuric or nitric acid, which, if skilfully applied, acts on the iron, and leaves the letters raised. When the printer's ink contains some bees-wax, the experiment is more complete. These plates, once formed, may be converted into steel, on the plan of Mr. Perkins; after which they would probably print from 10,000 to 20,000 copies without being materially defaced. An expert mechanic, with proper machinery, could in a day or two form a sufficient number of plates to print off 20,000 copies (500 pages) of an octavo volume.

Other metals, as copper, brass, and type metal, with slight variations, can all have letters transferred to them in the same manner, and can be used as printing plates; but none of these will have the durability of iron.—[American Journal of Science.]

Correct Fusing Points of Metals and Alloys, and other important Temperatures, upon various Thermometrical Scales. [From the Repertory of Arts, &c.]

In the thirteenth edition of Parkes' Chemical Catechism, edited by Mr. Brayley, jun., which has just appeared, we find a "Table of the Effects of Heat," (p. 606), in which the higher temperatures have been corrected by the editor, agreeably to the pyrometrical researches of Mr. Daniell and other chemists. As we do not remember to have seen any connected view of the results, as to the correct fusing points of metals and alloys, &c., which Mr. Daniell has obtained by the use of his new register pyrometer, we subjoin an extract from this table, containing the temperatures from 212° upwards. It may be requisite to state, for the information of such of our readers as may not be acquainted with the present state of pyrometry, that Mr. Daniell has shown (as we find it explained by Mr. Brayley at p. 70, notes, of the Chemical Catechism,) that "the degrees (above the zero of 1077° Fahrenheit, which is stated to be a red heat visible in the daylight,) of Wedgwood's pyrometer, instead of being equal to 130° of Fahrenheit, as supposed by its inventor, are equal only to about 20°;" and that consequently the range of that instrument, instead of including 3200 degrees of Fahrenheit, did not really include more than about 5000°: this will account for the great difference of the corresponding temperatures of Fahrenheit, &c., and Wedgwood, as here stated from the new edition of the Chemical Catechism, from those given in former editions

of that work, and also in many other publications on chemical subjects.

Fusing Points, &c. on the scales of Fahr. Reau. Cent. Wedg.

Water boils, and "fusible metal" [$\frac{1}{8}$ bismuth, $\frac{1}{8}$ lead, $\frac{1}{8}$ tin, smelt]	212	80	100
Sulphur melts	216	89	111
Nitrous acid boils	242	93	116
Camphor melts	288	114	142
Sulphur burns slowly	303	120	150
Pewter melts, [lead $\frac{1}{2}$, tin $\frac{1}{2}$]	403	165	206
Tin melts	442	182	227
Type metal melts, [lead 16 parts, antimony 1]	507	211	264
Sulphuric acid (sp. gr. 1.848) boils	590	248	310
Lead melts	612	258	325
Mercury boils	662	280	350
Zinc melts	773	329	412
Iron bright red in the dark—hydrogen gas burns?	800	341	427
— red in twilight	884	386	475
— red heat in daylight	1272	551	700
Enamel colors burnt, or burnt-in,* on porcelain,	1392	605	756
Bronze melts, [copper $\frac{1}{2}$, tin $\frac{1}{2}$]	1446	629	786
—, [copper $\frac{1}{2}$, tin $\frac{1}{2}$]	1534	668	835
Diamond burns?	1552	676	845
"Orange heat" (Prinsep)	1650	719	899
Brass melts, [copper $\frac{1}{2}$, zinc $\frac{1}{2}$]	1672	730	911
—, [copper $\frac{1}{2}$, zinc $\frac{1}{2}$]	1690	737	921
Bronze melts, [copper $\frac{1}{2}$, tin $\frac{1}{2}$]	1750	794	955
Silver melts	1873	818	1023
Copper melts	1996	860	1091
Gold melts	2016	862	1102
Delft-ware fired	2072	967	1179
Cast iron melts	2786	1224	1420
Cream-colored stone-ware fired	2992	1316	1645
Temperature of the maximum of expansion of platinum, being nearly the highest degree of heat attainable in a laboratory wind-furnace,	3280	1444	1805
Flint glass furnace, greatest heat?	3552	1253	1956
Soft iron melts, according to Clement and Desormes, but in all probability an estimate considerably above the truth,	3945	1406	2118

Mr. Brayley observes, at the end of the table, "The still higher temperatures, derived from the experiments of Mr. Wedgwood, which were here given in former editions of the Chemical Catechism, are now omitted; a comparison of them with the results obtained by Mr. Daniell, by means of his pyrometer, having shown that they cannot be relied upon. Some of the temperatures given in this Table above that of ignition, or 800°, must also be regarded as doubtful, and all of them must be regarded as approximative merely.

*This is a technical term used by enamellers, glass and porcelain painters, &c., to denote the fixing of the color, they employ, by means of vitrification, on the substances painted upon.

ANCIENT MARKS ON PAPER.—Every one knows how often we are obliged to refer to ancient times to explain common terms of art, and words which are in every one's mouth. We have a curious instance of this in the names which are given to the different sorts and sizes of paper. We all talk of *foolscap-paper*, *post-paper*, and *note-paper*;

and paper-makers and stationers have other terms of the same kind, as *hand-paper*, *pot-paper*, &c. Now, the term *note-paper* is clear enough, as it evidently means paper of the size fit for notes; while *post-paper*, we may suppose, means the larger size, which is used for letters sent by the post. But when we come to *foolscap* paper, we are altogether at a loss for an explanation; and here we find we must look to something else than the size of the paper as to the origin of the name. Now, if we go back to the early history of paper-making, we find that terms which now puzzle us so much may easily be explained by the various paper marks which have been used at different times. In ancient times, we know, when very few people could read, pictures of every kind were very much in use where writing would now be employed; every shop had a sign, as well as every public house; and these signs were not then, as they very often are now, only printed on a board; they were always either painted pictures, as many inn signs still are, or else models of the thing which the sign expressed, as we still sometimes see a bee-hive, a tea-canister, or a doll. For the same reason, printers had always some device which they put upon the title pages, and at the end of their books; and paper-makers used marks to distinguish the paper of their manufacture from that of others. Some of these marks becoming common, naturally gave their name to different sorts of paper; and as names, we all know, remain very long after the origin of them is forgotten, and the circumstances changed, we shall not be surprised to find the old names still in use, though perhaps in some cases they are not applied to the same things they originally denoted. It will be the best way, perhaps, to mention briefly the chief paper marks which have been used, as they occur in the order of time. The first paper-maker in England is supposed to have been John Tate, who is said to have had a mill at Hertford; his device was a star of five points within a double circle. The first book printed on paper manufactured in England was a Latin one, entitled *Bartholomeus de Proprietatibus Rerum*. It was printed in 1495 or 1496. The paper seems to have been made by John Tate, the younger, and had the mark of a wheel. The paper used by Caxton, and other early printers, had a great variety of marks, of which the chief are the ox-head and star, the letter P, the shears, the hand and star, a collared dog's head, with a trefoil over it, a crown, a shield, with something like a bend upon it, &c. The ox-head, sometimes with a star or flower over it, is the mark of the paper on which Faust printed some of his early books; but the open hand, which was likewise a very ancient mark, remained longer in fashion, and probably gave the name to what is still called *hand-paper*. Another very favorite paper mark, at a somewhat later period, was the jug or pot, which seems to have been the origin of the term *pot-paper*. It is sometimes found plain, but oftener bears the initials or first letters of the maker's name; hence there is a very great variety of figures, every paper maker having a somewhat different mark. The hand and pot marks existed from 1539 to 1639, as may be seen in old Bibles. The foolscap was a later device, and does not seem to have been nearly of so long continuance as the former. It has given place to the figure of Britannia,

or that of a lion rampant, supporting the cap of liberty on a pole; the name, however, has continued, and we still denominate paper of a particular size by the title of foolscap paper. The figures have the cap and bells which we so often read of in old plays and histories, as the particular dress of the fools, who formerly formed a part of every great man's establishment. Post-paper seems to have derived its name from the post-horn, which was at one time its distinguishing mark. This is of later date, and does not seem to have been used before the establishment of the General Post-Office, when it became the custom to blow a horn. This mark dates from 1670 to 1679. The mark is still sometimes used; but the same change which has so much diminished the number of painted signs in the streets of our towns and cities, has nearly made paper marks a matter of antiquarian curiosity, the maker's name being now generally used.—[Saturday Magazine, No. 11.]

CARRIAGES.—Wheel carriages for pleasure are generally supposed to have first come into use in England in the reign of Queen Elizabeth. But long before that time carriages of some sort were used on state occasions, or for the conveyance of sick persons. Even in the time of the Saxons, a clumsy kind of car, on four wheels, was employed to carry great personages; and Stow tells us, that, during Wat Tyler's insurrection in 1380, Richard the Second, "being threatened by the rebels of Kent, rode from the tower of London to the Miles End, and with him his mother, because he was sick and weak, in a *whirlcote*," which is supposed to have been a sort of covered carriage. "Chariots covered, with ladies therein," followed the litter in which Queen Catherine was carried to her coronation with Henry the Eighth. But Queen Elizabeth's is the first that was called a *coach*. In 1564 William Booner, a Dutchman, became the Queen's coachman, and about this time coaches were brought into general use in England. In 1588 Queen Elizabeth went from Somerset House to Paul Cross, to return thanks on the destruction of the Spanish Armada, in a coach presented to her by Henry, Earl of Arundel. These coaches must have been clumsy uncomfortable machines. They had no springs, and the state of the streets and roads must have made travelling in them any thing but easy. But fashion brought them into such general use, that in 1607 Dekker complains that "the wife of every citizen must be jolted now." And in 1636 there were 6000 of them kept in London and the neighborhood. At first they had only two horses, but afterwards the number was increased. In the reign of James the First, "the stout old Earl of Northumberland, when he was got loose, hearing that the great favorite Buckingham was drawn about with a coach and six horses, thought he might very well have eight in his coach, with which he rode through the city of London to the vulgar talk and admiration." In general, however, it was thought disgraceful in those times for the male sex to ride in coaches. "In Sir Philip Sydney's time, so famous for men at arms, it was then," says Aubrey, "held as great a disgrace for a young gentleman to be seen riding in the streets in a coach, as it would now for such a one to be seen in the streets with a petticoat and waistcoat, so much is the fashion

of the times altered." Sir Walter Scott says, it is a tradition in Scotland, that chaises or chariots were first introduced into that country in 1745. Before that time the nobility were accustomed to travel in vehicles somewhat resembling Noah's ark, and the gentry on horseback; but in that memorable year, the Prince of Hesse appeared in a carriage of this description, "to the admiration of all Scotchmen, who regarded it as a coach cut in half." When we compare the clumsy things in which even our kings formerly rode, with the convenient and light carriages of the present day, we cannot help admiring the progress which our workmen have made in this and every other branch of art, and hoping that their skill may always find that encouragement which it so well deserves.—[From a paper in the *Archæologia*, by J. H. Markland, Esq.]

AGRICULTURE, &c.

USE OF MARL.—A correspondent of the *Baltimore Farmer and Gardener* thus speaks in favor of this manure:

I have been favored with the use of this mineral, as a manure, for more than twenty years, in neighboring states; and have, in many instances, witnessed the most wonderful improvement from its application. There is a great variety in the composition of this article; all of which require a corresponding difference in the component parts of the soil to which it is to be applied, for profitable results. He who goes to work with this manure without a knowledge of the composition of either his soil or his marl, will but flounder in an uncertain ocean of wild "experiment," and in many instances may expect to lose both his labor and his "deposits."

In New-Jersey there are three principal strata of this substance, differing materially in their composition, and in their adaptation for particular soils. The first stratum lies near the Delaware, is met with along the banks of creeks, and in the bottoms of wells—in one instance within my knowledge, it was penetrated nearly one hundred feet; but without going through the layer. This abounds with a large proportion of shells, and other fossil remains. The second stratum, farther up the country, has fewer shells, of a black color, and is granulated, by reason of which it has obtained the name of gunpowder marl. The third stratum lies still farther up the streams, and bordering on the regions of pines—this species strongly impregnated with sulphurous acid; so much so, in some instances, as to corrugate, and even excoriate, the cuticle on the hands of the laborers in the pit—has no undecomposed shells, color black, green, and sometimes blue, which has been used as a pigment for painting. I was acquainted with one tract of land which abounded with this latter species of marl, and was rendered almost entirely barren. With the exception of here and there a scrubby white oak, the soil was almost as bare as the beaten pathway. It had not been thought to be worth the expense of an inclosure, until it fell into the hands of a gentleman who understood something of the science, as well as the art of agriculture, and knew how to appreciate the value of a retort in the hands of a ploughman. On discovering the composition of his sterile soil, he knew how to apply the appropriate remedy, and after inclosing a lot, it was ploughed deeply, dressed with a coat

of the hydrate of lime, and laid down to clover; and a finer crop, of that valuable grass I never witnessed. Here the uncombined acid of the soil, uniting with the calcareous matter, formed the sulphate of lime, or plaster of Paris, which enters largely into the composition of clover, and forms its proper nourishment.

At this cheap rate, was this barren waste converted into a rich and beautiful meadow; not exceeded in value by any bottom meadow within my knowledge.

Had marl of the first mentioned species been applied to this land, it would have produced the same effect, in proportion to the quantity of undecomposed calcareous matter which it contained. The second species would have produced little or no effect; but had the last mentioned kind been used, it would have been like adding fuel to the flame, and would have rendered the sterility more lasting and obstinate. It was refreshing to witness the effect of this blooming spot, surrounded by the dreary waste. It could only be compared to the effect on the furnished caravan, when, traversing the blowing sands of Arabia, he descries in the horizon the lonely palm tree, marking the site of a solitary spring of water.

Preparation of Beet Sugar. By Dr. F. WURDEMANN. Being an extract of a letter from Dr. Wurdemann, of this city, now in Paris, to Dr. Ravenel, and communicated by him for publication in the *Southern Agriculturist*.

"PARIS, December, 1833.

"The beets are collected when ripe, or little before that time, and immediately brought to the cleaning machine. This consists of a cylinder composed of rills of wood, and revolving in a trough filled with water; into this cylinder, the beets with their tops, as torn from the ground, are put, and thoroughly washed; one objection to cutting off the tops before washing, is that a quantity of saccharine matter escapes. They are then brought to the rasping machine, which breaks down their cellules, and reduces them to fine pulp. In some places the beets are brought dried to the manufactory. They should then be cut in transverse slices, and dried in a stove heated somewhat below the temperature of boiling water, that being sufficient to destroy the principles of organic life in the beet, and which militates against the action of affinity present in all inorganic substances. The temperature should be below 112 degrees of Fahrenheit, as it appears that at that point the coloring matter is formed readily, either from a re-action taking place between the principles contained in the beet, or during the maceration, from the water used in that process. For the same reasons the time and degree of heat used in maceration should not exceed that requisite to extract the saccharine matter.

The quantity of fibrous matter contained in the beet is so small, in proportion to the liquid, and the cellules containing the latter are so minute, that it requires a most complete rasping to prepare them for the press. The presses most esteemed are those which press but a small quantity at a time, and that with expedition; as by these means most juice is obtained from the pulp. They are of two kinds, the screw and the hydraulic; but the limits of this paper will not permit me to give you a description of either; suffice it to say, that the pulp, having been placed in strong, closely woven cloth, is submitted to these presses, and the juice flows immediately into cauldrons, (coppers,) in which it undergoes the process of defecation. From good beets Dombasle obtains 85 per cent. of juice; from good and indifferent, 60 per cent. is usually got. From boiling them and then cutting them in slices, over which a current of water flows successively, he

has obtained 90 per cent.; 60 lbs. of juice of good white beets yield from 4½ lbs. to 5 lbs. of raw sugar; those grown in rich wet soils give less.

The juice thus, or otherwise obtained, is subject to a spontaneous alteration, which is important to know. If exposed to the atmosphere, it gradually acquires a stringy and oil-like consistence, which, increasing in proportion to the evaporation of the liquid, at last resembles that of the white of an egg. These changes take place in less than twenty-four hours, when the temperature is at 20 degrees to 24 degrees centigrades. The mass which before this change never showed any free acid, now contains both acetic and nanceique acids, (the latter described by Braconnet in 1813—*Annales des Chimie*.) It is supposed that this alteration takes place in the beet itself when kept in too large heaps, and thus subjected to too high a temperature. It is the formation of this viscous matter which presents a great obstacle to the crystallization of the sugar, and which, gluing together the crystals, prevents the molasses escaping. To guard against this alteration of the juice, the utensils used in keeping and stirring the beet juice should be kept scrupulously clean, and the greatest celerity possible should be used in all the necessary operations, from the grinding to the defecation. The instruments of wood must be frequently washed with the greatest care, and when laid aside, should be covered with milk of lime, and which should not be removed before their immediate use is required. One of the best means to prevent this alteration in the beet juice is to employ small coppers, capable of containing about two hectolitres (two hundred English quarts) each; five of this size are capable to serve for the fabrication of 30,000 lbs. of beet juice per diem. Although the heat may be applied to a large copper long before it is filled from the juice flowing from the presses, too much time passes before it is full, and arises at the temperature of 70 or 80 degrees centigrades, at which temperature the juice may be considered safe from the alteration above mentioned.

I will not dwell on the *modus operandi* of the substances used in the defecation of the juice, but proceed, at once, to state the process most generally adopted. The quantity of lime varies from 2½ to 3½ "grammes" for each "litre" (quart) of the juice. As a general rule, the quantity must be increased in proportion to the quantity of saccharine matter contained in the juice. The purest lime should be used, and in its greatest degree of causticity, and it should be reduced into a clear pap by means of a little water before put into the coppers. It is best to put it in the copper as soon as a few buckets full of juice have flowed in, it acting in preventing the decomposition already so much insisted on, which is apt to take place to a more or less great degree before the juice arrives at the requisite degree of temperature.

Two methods are now used to complete the operation. One consists in preventing the boiling of the juice, by extinguishing the fire before it arrives at 100 degrees temperature, and then being left at rest for half an hour, when the scum rises to the surface; the liquid is afterwards drawn off by a cock placed near the bottom of the copper.

The method preferred by Dombasle is to continue the fire under the copper, and, when near the boiling point, watch the first bubble which swells under the scum; immediately take a ladle full of the juice from the spot where it arises, and pour on the spot a quart of cold juice, which checks the action immediately; the same operation must be repeated as often as a bubble appears, (which must never be permitted to burst and spread over the scum,) until, by examining the liquor taken up in the ladle, the defecation is found complete, when the fire must be extinguished, and the liquor allowed to rest for a half hour before drawn off; always guarding the bubbles, which may continue to rise, from bursting by the means already indicated. By this method, the operator is rendered com-

plete master of the work, and in those cases in which sufficient lime has not been used, he can have time to add more when he finds that complete defecation will not take place. For this purpose he has only to dilute a quantity of the milk of lime in the cold juice, which he pours into the copper. Even the introduction of the cold liquid alone sometimes produces a remarkable effect: a single quart changing the state of the liquor and causing the separation of the fæces in large flakes. The complete defecation is known by the liquid in the ladle being of a fine white wine color, and perfectly transparent, and that the fæces are divided into large flakes, which settle quickly to the bottom of the ladle. The liquor having been drawn off, the scum and residue are then placed on cloths extended over a table composed of wooden ribs, and having an elevated border; below this is placed an inclined plane, which conveys the juice into a reservoir containing the rest of the clarified juice. The cloths should be of cotton in preference to wool, which the lime, still retained by the fæces, is apt to rot.

Now, place the juice thus defecated into coppers destined to concentrate it. The form of the different coppers is not an unimportant object. Those used in defecation should be deep, viz. the depth half their diameter; and when bullocks' blood is employed in defecation, they should be as deep as wide. The coppers for concentration should be as wide as one foot in depth to four or five feet in diameter, those for cooking differ from these last only in having their bottoms three "lignes" in thickness at least. The combustible matter is pit-coal or wood, and the furnaces must be adapted to each. Animal charcoal is used in the concentration; that made from bones and not horns is employed. Its action is not confined to removing the color, but it acts also in an inexplicable manner, enabling the syrup to support a higher degree of temperature; and without it, it is almost impossible to cook the syrup on an open fire, which process will now be described.

Place the clarified juice into the concentrating coppers, and saturate the excess of lime, if it exist, by diluted sulphuric acid; it should not be rendered completely neuter, only so far that the purple (tournesol) paper changes slowly blue. Then pour in the animal charcoal in the proportion of $1\frac{1}{2}$ lbs. to a "quintal" (100 lbs. weight) of the liquor. Boil and continue the concentration until the hot liquor supports (porte) 20 degrees *a l'areometre de Beaume*. It is then withdrawn and left to deposit in deep wooden vessels, and kept in a cool place, where it precipitates during cooling a great quantity of calcareous salts, among which the malates are most abundant. When the syrup is perfectly clear, (at the end of twenty-four hours usually,) it may be submitted to the action of cooking (cuite.)

Being placed in the cooking coppers, carry it by a brisk fire to 32 degrees of *areometre de Beaume*. Extinguish the fire, and throw in animal charcoal, in the proportion of $\frac{3}{4}$ lbs. to a quintal of the juice which has furnished the syrup, viz. half the quantity employed the first time. Let the syrup now cool to about 75 degrees, stirring it occasionally to mix the charcoal well with it; then carry it into the clarifying coppers, and submit it to the usual clarification of bullock's blood; it is then drawn off clear and the cooking proceeded with. The scum, &c. is placed on woollen cloths to drip. The preceding is considered the most difficult part of the process. The cooking coppers now receive it, and the point of concentration is told by touching the ladle dipt in the syrup and drawing out the thread. The thumb being below, when the finger is drawn from it, the thread should break at the thumb. The thermometers used for this purpose are rejected by M. Dombasle, as not to be relied on. When of the proper consistency, it is poured out into the "rafrachissoir," where it crystallizes.

The method recommended by Payer is to evaporate the defecated juice to twelve degrees of Beaume, without adding any animal char-

coal; then draw off all the liquid into a filter filled with animal charcoal; evaporate rapidly the filtered liquid to twenty-five degrees of Beaume, and filter again through a filter of Dumont with fresh animal charcoal. The syrup is thus rendered ready for the cooking, it yields more crystals of a more beautiful hue, and the suppression of the bullock's blood no longer leaves a portion soluble and alterable. Payer recommends also the copper on a pivot for cooking the clarified juice, it (cooking) being in this accomplished in five or eight minutes, while the other method requires thirty or thirty-eight minutes; moreover, the alteration is six times less in syrup cooked in this than in the usual stationary coppers. The fire being brisk, the ebullition is commenced in one minute in every part of the copper; frequently the syrup is too viscous, and rises in a thick froth, and, incompletely wetting the bottom of the boiler, hazards the burning of the sugar; to check this instantaneously, throw in a small quantity of fresh butter, four or five grammes, which Dombasle recommends to have been previously melted, as that operation prevents the sugar receiving any flavor from it; as soon as the syrup, by means of the touch, is found cooked, draw the cord, and thus canting the copper, its contents pour out at once; open the stop cock, and proceed with the process; seven or eight products being thus united in the rafrachissoir, it is rolled into the rooms containing the forms, for much of the French beet sugar (raw) is in loaf form.

I have thus, my dear sir, given all the information I possess relative to the manufacture of beet sugar from the expression of the juice to the crystallization. I have drawn freely from the latest and most esteemed works, but as yet have not been in a refinery. I thank you for the hint, how I may render my stay here serviceable to my native city; and shall use my endeavors to gain admittance into a refinery before my return.

I am, with great regard, dear sir, yours,
F. WURDEMAN.

APPLES FOR OXEN.—Last season a widow lady residing in New-Jersey bought a pair of working oxen for \$55. She had them fed on apples and grass, with the addition of four or five bushels of ears of corn. She sold them in the fall to the butcher for \$94. The apples were the kinds of which the best New-ark cider is made.

Report on the Cultivation of Turnips with Compost applied in a peculiar manner. By MR. HUGH MUNRO, Assynt by Evanton, Ross-shire.

[The following is from the Transactions of the Highland Society of Scotland, and the plan may be worthy of imitation in some instances.]

I had a field of nine acres, which I wished returned into grass, and from the little experience I have as a farmer of four years' standing, I considered that grass after turnip eaten off by sheep would be better than after any other course. I at one time thought I should be obliged to purchase bone-manure for this field, not having any fold manure; but the expense of bones for nine acres, at twenty-five bushels per acre, at 2s. 10d. (the price last season), would £3 10s. 10d., or £31 17s. 6d. I have, however, heard that fourteen bushels of bones per acre have been applied to raise turnip with success, which makes £1 19s. 8d. per acre, or £17 17s. for nine acres. So I determined to try and find a substitute that would be cheaper and equally effective, in which, I am happy to say, I have succeeded beyond my most sanguine expectations. I got some of the small tenantry to bring to me a quantity of peat-moss, for which I paid £2 10s. I then mixed all the chaff from the mill, the fire-ashes from my own house, together with the sweepings and fire-ashes, &c. &c. of my servants' houses, (for which I gave straw to bed their pigs,) the scrap-

ings of roads and ditches, and then wetted the whole with the superfluous urine from the fold, having added a little lime and horse dung, and turned it frequently till it was well pulverised; and in this way I prepared 45 single cart loads. During the winter, I drilled from the stubble the field intended for turnip, and let it lie exposed to the weather in that state until the end of May, when I harrowed it smooth, and then drilled it again by splitting the former drills. I then put a light roller over the drills to make it smooth, and commenced laying down the turnip in the following manner. I had five men with large dibbles made of hard wood, with which they made holes eight inches apart on the top of the drills, pressing down the dibble with the foot, each man having a single drill, followed by a woman with a basketful of the prepared manure,* and into each hole made by the dibble she placed a handful of manure. After her, followed a girl with a little bag of turnip seed†, putting from three to six or more grains on the top of the manure, with her fore finger and thumb, drawing a little earth over it; and in this manner I carried on five drills at a time with fifteen people, viz. a man and two women to each drill. The whole went on like clock-work, and I finished the nine acres in four days, at an expense of about £5, including purchase of peat moss. The turnips grew rapidly, and I had them cleaned in the usual manner, sometimes leaving two plants in one hole, which I found to answer well, especially if the plants happened to be a little distant from each other, say about two inches. I have thus raised an excellent crop of large turnip, by applying only five single cart-loads per acre of this prepared manure, and the expense of the whole does not exceed £5; indeed, they are so good, that I am now stripping one half previous to putting on the sheep. Every one who has seen the turnip has been surprised, and several in my neighborhood intend adopting the same plan next year. I shall now attempt to make some observations on this plan which I have adopted.

1st. Where the land is foul with weeds, the usual mode of cleaning should be adopted, and then drilling the land once.

2d. That the manure to be prepared should be made as strong as possible, by the superfluous urine of the court-yard in winter; and that the scrapings of roads and ditches, with rubbish of old houses, &c., would be preferable to peat-moss. A boll of lime should also be mixed with every ten cart-loads, and, when well attended to, less than five cart-loads per acre will be found sufficient.

3d. I observe that, although the season may be dry, and the sides of the hole liable to fall in, yet, by making the women with the manure follow the dibble quickly, this inconvenience (and I may say it is the only one) will be obviated in a great measure; and where this was done, I found no difference in the crop of turnips.

4th. This plan can be followed in all kinds of weather, and better while raining, which is not the case in the usual method.

5th. Where five or more grains of the seed come up together, (forced on by the strength of the manure over which the seed is immediately placed,) they will force themselves through, even should the soil be barked by rain, wind, and sunshine. And,

6th. Should dry weather be the character of the season while sowing the turnips, they will show a healthy braid, the manure, which is their food, being close at hand, and they not being obliged to push their delicate roots through a quantity of earth in search of nourishment, as in the method now in use.

* The manure is taken to the field in carts from where it is made, and the driver fills each woman's basket as they may require it.

† I only expended 2 lb. of turnip seed for each acre.

HAIL.—Hail fell in St. Francisville, La. on the 27th of March, and killed some sheep, chickens, &c. Some of the stones were as big as turkey's eggs.

CULTIVATION AND MANAGEMENT OF THE TOBACCO CROP.—Having an increasing number of subscribers in the southern states, we deem it due them to occupy a portion of our pages, even for their exclusive benefit.

To the Editor of the Farmer and Gardener.

SIR—To enable us to answer the numerous inquiries, which are constantly made relative to the cultivation of tobacco, we requested an extensive and highly intelligent planter (of whom we have received ten varieties of seed of the choicest Maryland sorts) to give us his views relative to the proper mode of cultivation and management.

We have the pleasure of enclosing his remarks on the subject. If you think them worthy a place in your valuable paper, publish them; the result may prove useful to your numerous subscribers. Respectfully,
yours,
SINCLAIR & MOORE.

Baltimore, May 20, 1834.

The ground is prepared as you would for cabbage seed; in addition, it is always, when taken from new ground, burnt by placing a quantity of brush upon it, then set on fire, for the purpose of cleansing it from all filth. The repetition of burning may be avoided by always weeding up the bed after you are done with it for the season. The quantity of seed required is about a wine-glass full to ten yards square; but in this we differ in practice very much—we know if we could be certain it would always come, that this quantity would be enough; and as it is uncertain, we most always sow three times as much, with the calculation, should it be too thick, to rake out the over quantity. This raking is of rather a recent date, and is done by a small rake made of 10d. nails, put about five-eighths of an inch apart, with sharp points; and it is used with a little slight of hand, so as to divide the plants without leaving them in rows. This operation is performed when the plants are about the size of a five cent piece, which is usually in the early part of May, and just before we think of planting.

Planting is usually done from the latter part of May to the 10th of July; here again I must refer you to the mode of preparing and planting cabbages in hills. The size of the plants, about three inches broad, are the best size to plant out; when transplanted they are also cultivated very much as cabbages, only oftener worked with the plough and hoe.

Usually, in the middle of August, tobacco will signify its approach to ripening by buttoning and blossoming, at which time we quit working it, and proceed to break off the blossoms to such a leaf as we think will ripen as soon as the bottom leaf, (which we call topping tobacco); after this it will commonly put out suckers just above the joints of the leaves, these must be broken off, and then we think it time to house. *Cutting and housing:* This is done with a similar instrument to a butcher's cleaver. After it is cut it may lay for a little time, until the leaves fall and will not break by handling.

From the ground it may be taken in large loads to the tobacco house, where it is usually pegged (a wooden peg six inches long is driven into the butt, by which it is hung on the sticks in the house,) but sometimes split; this is done by a knife, splitting the stalk down nearly to the butt, before it is cut down in the field, and when brought to the house it is

straddled across the sticks, instead of being hung on them by the peg. The sticks are placed on the bearers in the house about six inches apart, the plants put from four to six inches apart, according to the size, where it is cured either by fire or suffered to cure by the air. It is considered cured when the stem of the leaf is dry. *Stripping* comes next; for which we choose moist weather, the only time it can be handled without crumbling, and tie it in bundles, from which it is generally put in bulk and watched that it does not heat; after which the bundles are straddled across the sticks for *conditioning* to pack; here it must be noticed that the bundles get completely dry, and then as soon as moist weather again enables you to handle it, it must be taken down and put in large bulks and weighed; this is called *close bulks*, here it is ready for packing; that process is so generally known that I do not deem it necessary here to say any thing about it.

The kinds. Tobacco is esteemed mostly for two reasons, one for *quality*, the other for *quantity*. It is supposed the thinner jointed tobacco generally cures the brightest, but I do not entirely subscribe to this opinion, as I have often seen the thick jointed of as good color. Am inclined to think there is more in the soil than in the kinds; a poor hickory soil will produce a good color, when I have seen such black soil produce very dull tobacco; but as a general rule, give me the thick jointed sort, and upon tolerable strong loam. Rich stiff soil will not produce a bright crop, but will give a heavy crop; quite sandy soil, on the other hand, is likely to produce bright, but a light crop. So, upon the whole, I should prefer the thick jointed tobacco, and upon a loamy soil of pretty good strength, to produce the most profitable crop.

Tobacco is a very troublesome crop; it never being off hand. The seed of the new is sown before the old crop is packed and sent to market. It is subject to many enemies, among them the fly in the bed and in the field; when small, the ground worm, the bud worm, the web worm, and lastly, and most destructive, the horn worm; these come in immense quantities, and are similar to the Tarmata worm. They will, from the eggs laid upon the leaves, grow in a few days as large nearly as your finger, and will, in a short time, leave nothing of the plants but the stems and stalk. These worms are the common enemy; they commence with the first growth of the tobacco, and at different periods follow it up until the crop goes to the house. Our plan of defence is to pick them off by hand, or use turkeys; they are best, because more expeditious. Turkeys, by driving them into the tobacco, will regularly examine each plant and pick them off.

I neglected in its place to say what time the seed should be sown—from February to the first of April is the best time; and the quantity raised per acre is generally one thousand pounds from 3,500 to 5,000 hills, according to the quantity of land.

PLOUGHING IN GREEN CROPS.—I have found by experience, that when a spring crop is taken off, and wheat is to follow, the best method is to harrow thoroughly, immediately, which causes all the seeds of grain which may have scattered, or of weeds, to vegetate. About two weeks before seeding, turn all the green stuff and stubble under the soil, there to remain and rot. If ploughed the second time,

much of the stubble is brought to the surface and lost.—[Genesee Farmer.]

AN IMPROVED BEE HIVE.—The box or hive to be made of inch plank, say about two feet three inches by twelve inches wide; the upper part of the box to be partitioned off, allowing just space sufficient to admit a drawer of about ten by twelve inches deep. This drawer is to slide upon the horizontal partition, and to be made to fit the inside of the box exactly. In the bottom of the drawer a hole is to be made, say about one and a half inch in diameter, and a corresponding one in the partition, so as to allow the bees to pass up from the lower part of the hive into the drawer. In the outer side of the drawer, a pane of glass is to be fixed, in order to ascertain when the drawer is filled with honey. Over the glass, a sliding shutter is to be placed, to exclude the light; or the upper end of the plank, forming the back side of the box, or hive, may be sawed off, and fastened with a hinge and button, so as to answer in place of the sliding shutter. When the honey is wanted for use, remove the shutter from before the glass, and having ascertained that the drawer is filled, introduce a little smoke into the top of the drawer by means of a tobacco pipe; and when the bees have been driven into the lower part of the hive, separate the drawer and partition with a case knife, remove the drawer, and having emptied it, return it to its place again, and the bees will commence working in it immediately. By this method the honey will be always pure, without bee-bread, or dead bees, and not a single bee need be destroyed; and moreover, it has been tested by many years, trial, and found to answer the intention completely. Z.

P. S.—The drawer should have a top screwed on, so as to be more readily opened when the honey is to be taken out; and any space between the drawer and the sides, or top of the hive, should be filled with some kind of cement, so as to prevent insects from making a lodgment within the hive.

A CURIOUS HORTICULTURAL ANECDOTE.—When Sir Francis Carew had rebuilt his mansion house at Beddington in Surrey, he planted the garden with choice fruit trees. There he was twice visited by Queen Elizabeth; and Sir Hugh Platt, in his Garden of Eden, tells a curious anecdote relating to one of these visits. "I conclude," says he, "with a conceit of that delicate knight, Sir Francis Carew, who, for his better accomplishment of his royal entertainment of our late Queen Elizabeth, led her majesty to a cherry tree, whose fruit he had of purpose kept back from ripening at least one month after all cherries had taken their farewell of England. This secret he performed by straining a tent or cover of canvass over the whole tree, and wetting it now and then with a scoop, as the heat of the weather required; and so by withholding the sun-beams from reflecting upon the berries, they grew both great, and were very long before they had gotten their perfect cherry color; and when he was assured of her majesty's coming, he removed the tent, and a few sunny days brought them to their maturity."—[Platt's Garden of Eden.]

LEMON TREE.—In the green-house of the late Hon. T. Bigelow, of Medford, there is a lemon tree, which, besides its foliage, its buds, and flowers, has on it about three hundred lemons. These are of course of all sizes, from the smallest to the largest, which are sixteen inches in circumference. The tree is supposed to be about fifty years old. It was given to Mr. Bigelow by the lady of the late Hon. Wm. Gray, about twenty-five years ago. It is emphatically a perennial, being never without foliage, flowers, and fruit. Perhaps some of the credit of rearing and perfecting this splendid exotic may belong to the gardener, whose watchfulness and care have been applied to it during the whole time that it has been in its present place.—[Boston Courier.]

NEW-YORK AMERICAN.

JUNE 21—27, 1834.

Our table is so covered with books, that have accumulated there during the season of long documents, that it is almost impossible to turn one's pen around in hitting off a paragraph upon any of the prevailing subjects of interest. We are, in fact, suffering from a plethora of new publications, and without waiting for our usual weekly relief through the review, we must begin to practice a little daily depletion. Opening the first volume that comes in our way, we find it to be a collection of Aphorisms, from various authors, ancient and modern, embodied under the title of "The Moral Testament of Man," and neatly published by Key & Biddle, of Philadelphia. Without pausing a moment to examine the propriety of the title, as applied to a book made up of the sayings of Chesterfield and Rochefoucault, Byron, Bulwer, and others of the modern novelists, blended with the more orthodox good things of Johnson and Goldsmith, we will, as briefly as possible, say all we have to add by way of codicil to the Moral Testament. We never believed much in aphorisms, for great men say so much merely for effect, and say it at the same time so well, that they easily succeed in passing off sound for sense, and lead us to swallow antithesis for truth. An absurd instance of the kind occurs at this moment to us in the popular sayings of Lacon—(whose best things, by-the-by, are stolen from the Greek and the French Aphorists)—where he says that "Many a man has been canonized who ought to have been cannonaded." There is nothing as bad as this in "The Moral Testament," though the author of Lacon is largely quoted. But the compiler should have omitted one of the following quotations from Bulwer, which to most apprehensions seem to nullify each other:

"To be pleased with one's self is the surest way of offending every one else."

"The great secrets of being courted are to shun others and seem delighted with yourself."

Such an oversight, however, may be readily forgiven in consideration of the following capital quotation from Lavater, which is new to us:

"Who in the same given time can produce more than another, has vigor; who can produce more and better, has talents; who can produce what none else can, has genius."

That is, that genius is an *inventive or creative faculty*: the power either of bringing new resources to light, or of combining old materials in forms hitherto undreamt of. This to us has always appeared the true and simple, the only definition of a term which sophomores and sages will never cease puzzling themselves about. Genius may be called a gift because it seizes those things by intuition, which talent arrives at by process of meditation.

The quotations from Chesterfield in this volume are generally well chosen, though he might have been quoted more largely to advantage. Whatever one may think of Chesterfield's morals, his system of manners has this advantage over most others, that it is founded upon philosophy, and would suit all peoples in every age. The more modern writers of the subject treat only of the conventional dicta of the circles which they profess to paint,—of fleeting fashions, which have nothing to do with the essentials of good breeding, and which, however important at Almack's, would never enable a man to pass muster as a gentleman among the Turks and Spaniards—and they, if Lord Byron, Mr. Slidell and Dr. Dekay are to be believed, are the most really polite people in the world.

The great difference between Lord Chesterfield's doctrine and the prevailing English tenets—as exem-

plified in the man of breeding of his day and the man of ton of ours—was that the first was always to study what was due to his neighbor, the last to be ever on the qui vive as to what is due to himself. The former was presumed to be so much of a gentleman ingrained that he could not be affected by courteous intercourse with his inferiors. The latter seems to be held so precariously polished that the slightest contact with any object less soft and smooth than himself may brush the golden flour from his butterfly wings, and subject him to a loss of caste. The Chesterfield gentleman was born of the world and meant to shine in it. He that superseded him came from a London parish, and is suited to no other atmosphere. The raw material of the first abounds in West Virginia and Kentucky; the last you may see in a manufactured state by stopping an hour at any of the steam boat landings along the Hudson, and observing the air with which it steps ashore among "the natives." They however, may be best studied by seeing each meet one of its kind. The former, when he encounters a brother, seems to know him by intuition, the latter always waits until certain masonic signs pass between him and the party he wishes to recognize. In this month, green peas are their ordinary medium of communication, and the mystic figures are made with a fork. It must be admitted, however, that the Exclusive has this advantage over the Chesterfieldian—he is never alone; the real man, and the affected character always making good company for each other.

[FOR THE NEW YORK AMERICAN.]

Steamboat Native, Ohio River, June, 1834.

Oh you pampered New Yorkers, puffing and blowing in the heat and bustle and politics of your Babylonian phalanx, in the name of justice I entreat you send some investigator from the bevy of your uncomfortable idlers, and see with your own eyes, and tell with your own tongues, and—let conviction rest upon it—that Nature hath exhausted neither wardrobe nor jewel case in the decking of your thrice immortalized North River.

I am floating on the tranquil Ohio—which is just now in one of its happiest moods, neither hurrying on with a phrenzied haste, and spilling its unwelcome riches upon the grain fields—nor yet low, turbid, and uninteresting, as the best bred rivers will sometimes find themselves in the languor and heat of summer. The wheel of the "Native" has dislocated an arm, and the momentary pause having called me from my lounge, I am overwhelmed with a richness of scenery that never met my eye before, and in the fullness of gratification, I do protest (since that is the fashion) against a monopoly of praise that hath almost swollen your Anthony's Nose with satisfaction. The beauty of the Hudson River scenery consists, if I am right, in dark, precipitous and frightful cliffs, huge projecting rocks, and battlement-like embankments, and that in the upper country, more particularly in mighty barren hills of a grotesque figure. It has much of the stupendous and sublime for every eye, and is of that wild and Alpine character that ambitious young men, and amateurs in the Arts, like to be thought to admire—such as honest lairds and yeomen's sons break their necks after in Switzerland. Here then is the difference. The Ohio, calm, placid, unruffled as a Christian, is all smiles and love. On its banks, on either side, honest labor has earned a peaceful home, and the proprietors (no swollen cities) have put up—in well selected positions, sometimes on a point projecting into the river, and sometimes at the foot of a gently rising hill—a shelter, after the rude fashion of the country, often adding a beauty to the aspect that his art never intended. Here is a field in the dark green mantle of wheat—on the other side, extending far up the hill—where the trees have been girdled and left for time to fall, their naked and leafless branches outstretched as if in the agony of a protracted fate—is the dark, rich looking soil where the Indian corn is struggling into existence. The bosom of the river is covered with a variety of boats, and just before us is one of that huge and cumbrous fashion, so long known on these waters, barely solicited into motion by the joint efforts of the current, and the sweeps and poles of the boatmen. These last are singing—with rather more vehemence than melody—and as the boisterous echo returns from the shore, it mingles with the happy laugh of some young

adventurers, whose rickety shallop is dancing about in our wake. The immediate margin on either side, is fringed with hazel and beach, whose clustering foliage overhangs the water, bending with a grace—and you may trace the river wending far away, till the hills close in upon it, and all is lost and indistinct but the deep blue color, and the undulating outline against the sky. However, I do not desire to make a picture, and all I mean to say, is, that no man whose heart beats at beholding the independent and substantial comfort of a people, can view the Ohio scenery without feelings of satisfaction and gratitude that may fail to be aroused by the curious presentations of the Hudson.

I might say more, but we have a metaphysical Dutchman on board who is getting entirely too audible, and so, Adieu, H. S. E.

Our readers are indebted to H. S. E. for the foregoing animated invitation, and we sympathize fully with him in his lively admiration of the beautiful Ohio. But it was heretical in him to institute so close a comparison with the Hudson. He might as well compare Hebe with Juno, or rather the head of Autinous with that of the Apollo; Lalla Rooke with Childe Harold; or the delicate gazelle of the Indies with the antlered elk of our western prairies. No one will deny the far flowing river of the West, the exclusive title of *La Belle*, by which it ever will be distinguished above all rivers that seek the sea: no one at least that has seen the place of its birth in Pennsylvania, where Virginia and New York send two of their most beautiful streams to mingle and bear a united tribute to the father of rivers: or, after hurrying for days on the boiling and turbid current of his desolate waters, turned aside from their cheerless bosom, to glide over the transparent tide, and loiter by the arcadian banks of the beautiful Ohio.—But the Hudson—the lordly majestic Hudson—mingling so much grandeur with its beauty, and blending as many various charms together, as could be concentrated in its short passage to the sea—there is in our humble opinion on stream upon the continent that can in no romantic beauty of the highest order compare with it. There is a part of the Hudson, however, but little known by its warmest admirers, which, after repeatedly visiting, we have found more attractive than those scenes which have elicited admiration from travellers in all parts of the world. It is the northwest branch of the River, where it ceases to be navigable, and wanders about through the most broken and picturesque country in the Union, to hide its head in a hundred beautiful lakes. He who glides over their lonely waters—for the banks of many of them are still as solitary as those of the wildest waters of the Far West—he who glides over their transparent bosoms, or moves along their mountain shores where in one place frowning cliffs will darken the silent tide, and in another a fringe of silver sand receive its undulations, while, where the primeval woods slope more gradually to the shore, the wild deer steps unfrightened from her green covert to stalk along the snowy strand—could almost predict the infinite beauty and grandeur, the boundless variety of attraction that the stream which derived its birth from such sources would bear with it on its course.

[FOR THE NEW YORK AMERICAN.]

The Corner Stone.—A correspondent in one of your late numbers, inquires after the origin and meaning of laying the corner stone with invocation of the Divine blessing. As a religious rite, I apprehend its origin as Jewish, its application to type the coming Messiah, and would refer him to Isaiah, 28th chap. 16v. Solomon (himself a type) may have first introduced the custom in the building of the Temple, another type of the same glorious Person. In the New Testament scriptures, the same appellation is given to it: 1st Peter, 3d chap. 6, 8, where the Redeemer is styled the head of the corner; in Ephes. 2d chap. 20., the *Chief Corner-stone*. Builders of systems and temples have too often disallowed such a reference to the ceremony,—have too often considered him a stone of stumbling and rock of offence; but to those that look for Him, He is precious, as is every type and shadow that applies to (either) his Divine character or Divine mission. May you and I, Messrs. Editors, build on this (His) foundation *alone*, not wood, hay and stubble, but gold, silver, precious stones.—[Rev. 21st ch. 1v.]

Christians are the Temple of God, (Corin. 6th ch.

16v.) but it is in Christ alone, building on Him as the "Hope of Glory," and that the building is fitly framed (Eph. 2d ch. 21v.); for other foundation can no man lay than that is laid, Jesus Christ.—[1st Cor. 3d ch. 11v.] SCOTUS.

[FOR THE NEW YORK AMERICAN.]
A HINT TO TRAVELLERS.

Mr. Editor: As the warm season is approaching, and many persons are casting about to see when and where they may spend a few months in search of health, novelty, or amusement, or all united, perhaps a word of advice from an old stager may not be taken amiss by those who have had less experience.

I am a way-faring man; I am told that the bump of "locality" is mightily developed upon my pericranium; I delight in change. When wearied of the iron bound streets,—the piles of brick and mortar,—the heat and noise, and the endless, unvarying throng of the city, I love to rush into the open air, into the midst of fields and forests, and the neighborhood of the rushing waters.

And then, again, when I become tired of solitude and myself, I return with new zest to the presence of man and to the luxury of social life; and I find the pleasures to be found on either hand increased a thousand fold by the contrast.

The restless energies of our countrymen are daily opening new scenes, and offering new invitations to the tourist and traveller. The last one of these which I have visited "in search of the picturesque," was afar "down-east—in the midst of the "rocky mountains" of New Hampshire.

It is a lake of a most unpronounceable and unspellable Indian name, called by the present natives, as near as I can reduce it to writing, WIN NE-PE-SAW-KEE. If you were to endeavor to pronounce it as it is written by geographers, (Winnipisseogee), the people thereabouts would not understand you.

It is a beautiful, but very irregular, sheet of water, some twenty-five miles in length, and of no particular breadth, as Davy Crockett would say; full of islands, having exactly 365, as they say of all lakes and bays when the number is large, and not easily ascertained: it resembles Lake George in the clearness of its waters, but is, I think, superior to that famous lake in the variety, and even boldness of its surrounding scenery. Those who like the authority of great names, may find in the steamboat's album (for they have a very pretty steamboat there) the recorded opinions of Dr. Kirkland, and I think, of President Adams also, that in beauty and sublimity, it equals all and surpasses also most of the show-scenes of Europe; and I understand that the Rev. Mr. Bigelow, whose published travels in Sicily and Great Britain prove him to be a good judge, says that "Loch-Lomond" and the other Scotch lakes are not to be compared with it.

The sublime, but bare and solemn scenery of the White Mountains is about sixty miles distant from the north end of the Lake; at which point, by the way, at a quiet little hamlet, is a very nice and well provided public house.

From the Notch of the White Mountains you can return home by "crossing the country" to Saratoga, or, in an infinitely more agreeable manner, by descending the beautiful valley of the Connecticut, to Hartford.

The better way of reaching this Lake, by those who are not pressed for time, is to go to Portsmouth, where you will find a most elegant Hotel, kept in what I understand was the mansion house of the late Governor Langdon; 'tis called the Rockingham House, and in the minutiae, as well as the essentials, is equal, in my humble opinion, to any of the "crack" houses of the day.

DR. SYNTAX.

P. S. If you mean to fish for the salmon, trout, perch, and pickerel of the Lake, or the inimitably fine brook-trout of the mountain streams of New Hampshire, you had better take your fishing-gear with you. Every thing of that sort in the granite State, like their politics, is execrable. S.

[From the New Orleans News.]

LATEST FROM MEXICO.—By an arrival yesterday, we had Tampico papers of the 2nd June, from which some translations have been made.

MEXICO, MAY 18.—We are assured that the supreme government as just received intelligence by express that the city of Jalapa has opposed its civil authorities, and made the same declaration against

the government that the towns of Orizava and Cordova had just done before.

MAY 21.—We have seen several letters from Puebla, stating that on the night of the 17th inst a band of about 200 armed men seized on the convents of St. Domingo and St. Augustin, loudly demanding the deposition of the actual government of the city and state, and making the same proclamation in favor of religion and the church, that was done at Orizava and Cordova.

Last Monday, Senor Gonzales Angulo left here for Puebla, as a commissioner on the part of the general government, but the nature of his instructions has not transpired.

Yesterday, Colonel Gonzales Pavon, at the head of 200 cavalry, left this for Puebla. The prudence of this officer, and the instruction he has received to act with moderation, lead us to hope that the spirit of hostility in this city will soon cease.

Note by the Translator.—From the complexion of a political essay in one of the Mexican papers, it would seem that about a month ago, the President, Santa Anna, had evinced some hesitation concerning the line of policy he would pursue in future, that is, whether he would join the party of the clergy or that of the reformers. We regret to add, that letters from Vera Cruz state, that Gen. Santa Anna had joined the cause of the priests, and, with part of the army, are now determined to resist all reforms, and to carry back Mexico as near as possible, to what it was under the Spaniards. Indeed, we should not be surprised to see a Spanish or French prince in our neighborhood before the expiration of twelve months.

SUMMARY.

Our city has seldom witnessed a scene more imposing than the funeral procession of yesterday. The military array was greater and more brilliant than we recollect to have seen it, and their muffled drums, and measured march, their reversed arms, and mournful ensignia, had a peculiarly solemn effect—while the long procession, composed of the various societies, with their shrouded emblems and melancholy dirges, added every thing to the ceremonial.

Pursuant to previous arrangements, the different societies and associations, the officers of the General and State Governments, the members of the fire companies, the students of the colleges and universities, the public officers, the military, and other individuals invited, assembled at about two o'clock in the neighborhood of the City Hall. Their places in the procession were assigned them by the Marshals, and at about three o'clock, the procession commenced its line of march, in the following order:

The various volunteer military companies, preceded by the Grand Marshal of the day.

Clergymen of different denominations, wearing appropriate badges.

The Governor and Lieutenant Governor of the State, the Mayor of the city, and the Orator of the day.

The Common Council of the City, attended by City Marshals.

Officers of the U. S. and State Courts, members of the Bar, and of the State Legislature.

Officers of the Army and Navy of the United States.

A number of French residents followed, dressed in deep mourning, bearing a splendid banner inscribed, "A tribute to departed worth."

The Grand Lodge to the State of New York, in splendid Costume. A number of banners were borne inscribed to the illustrious departed.

The Faculty and Students of Columbia College, and of the N. Y. University, dressed in silk gowns.

The Fire Department came next, bearing a splendid urn, with appropriate devices. The different companies marched in respective order, each company with its badges, emblems and banners. The engine No. 5 displayed a magnificent banner with the inscription, "He is dead, but still liveth."

Then followed the Trades' Union Societies—the Journeymen Bakers, Cordwainers, Cabinet and Chair Makers, House Carpenters, Typographical Society, Saddlers, &c., the Hibernian Benevolent Society, Gold and Silver Artificers, Tin and Sheet Iron Workers, and Journeymen Tailors, Smith's Benevolent Society, Musical Instrument Makers, &c.

The URN, and the EAGLE, which were used on this occasion, were the same sacred emblems that were exhibited at the funeral solemnities on the death of WASHINGTON.

The URN was conveyed on an open carriage drawn by four white horses, guarded by the Lafayette Guards, and followed by the Revolutionary Pall bearers, members of the Cincinnati Society, in open barouches.

To form an idea of the immense number of individuals forming the procession, a morning paper states that when General Morton arrived at the Battery, a large number of the persons joining in the ceremonies had not yet left the Park. The scene in Broadway Chatham street, and through the whole route of the procession, far surpassed any exhibition of the kind ever witnessed in this city. The streets were lined with a dense mass of citizens, and every house on the line was filled even to the roof with spectators of the solemn scene. The public buildings, such as the Museum, and others, appeared to contain some thousands, even to the roof.

Shortly after six o'clock the procession began to arrive at Castle Garden. Some detachments of military had previously been stationed on the Battery, and by lining the promenade leading from the entrance on Broadway to the bridge at the garden, kept the ground free for the passage of the procession.

The Garden was in various places, indeed wherever circumstances admitted it, hung with black cloth. In the gallery opposite the rostrum in front of the great saloon, a temporary orchestra was erected, which was shrouded in mourning, and was occupied by the Band and Choir of the New York Sacred Music Society. The rostrum was covered with the American Ensign and with folds of black crape.

The Societies as they entered took their places in different parts of the Garden, and their various banners all shrouded and elevated in every direction, added materially to the solemnity of the scene. The funeral Urn, with the four greys which drew it, was placed between the fountain and rostrum, the company of Lafayette Guards being stationed around it.

About an hour having elapsed, the funeral service commenced with the following Hymn, arranged to the music of Handel's Dead March in Saul:—

Unvell thy boom faithful tomb,
Take this new treasure to thy trust,
And give these sacred relics room,
To slumber in the silent dust.
Nor pain, nor grief, nor anxious fear
Invas thy bounds. No mortal woes
Can reach the peaceful sleeper here,
While angels watch the soft repose.
Break from his throne, illustrious morn!
Attend, O earth! his sov'reign word;
Restore thy trust—a glorious form
Shall then arise to meet his Lord.

The Right Reverend Bishop Onderdonk, of the Protestant Episcopal Church, then read from the 15th chapter of the First Epistle of St. Paul to the Corinthians, commencing at the 20th verse to the end. He also read part of the Episcopal Service for the Burial of the Dead, during which, and at the close, the following pieces of music were performed and sung:

MARCH—PLEYEL'S HYMN.

RECITATIVE.

I heard a voice from Heaven, saying unto me, Write, blessed are the dead who die in the Lord.

CHORUS.

Even so, saith the Spirit, for they
Rest from their labors.

LUTHER'S HYMN

Great God! what do I see and hear?
The end of things created,
The Judge of mankind does appear,
On clouds of glory seated:
The trumpet sounds—the graves restore
The dead which they contained before—
Prepare my soul to meet him.

WHEN THE EAR HEARD HIM.

When the ear heard him, then it blessed him; and when the eye saw him, it gave witness of him.

CHORUS.

Why should we start and fear to die?
What tin'rous worms we mortals are!
Death is the gate of endless joy,
And yet we dread to enter there.
Jesus can make a dying bed
Feel soft as downy pillows are,
While on his breast I ease my head,
And breathe my life out sweetly there.

The most solemn part of the procession (says the Mercantile) we witnessed last night at 11 o'clock. It was the return from Castle Garden of the Horse and Urn, accompanied by the Lafayette Guards, with torches burning, and drum and fife playing the dead march.

The Funeral Oration of the Hon. James Talmadge we did not hear, but by those who had that pleasure, it is spoken of as eminently happy.

The public feeling displayed yesterday—for one deep and solemn feeling seemed to pervade the whole mass of our assembled population—gave a moral effect to a pageant which, for its orderly arrangement and imposing details, was every way worthy of New York. From Providence, Salem, New Haven, at the East; from Alexandria, Fredericksburg, Richmond, on the South; and several towns Westward,—which the melancholy news has reached,—we hear of immediate measures for similar public expressions of feeling. A spontaneous tribute to departed worth, characteristic of a high-toned people. The fitting requiem of one whose noble deeds seemed ever as instinctive as the grief that mourns him, and broad in their benefits, as will be the sorrow for his decease.

The following are the five distinguished Cadots in each Class, as determined at the examination, which terminated on the 16th instant.

- | | |
|----------------------------|--------------------------------|
| 1st CLASS. | 2d CLASS. |
| 1. William Smith of N. Y. | 1. Chas. J. Whiting of Me. |
| 2. John Sanders of Flo. | 2. John H. Martindale of N. Y. |
| 3. H. Loughborough of Ken. | 3. Geo. W. Morell of N. Y. |
| 4. Thos A. Morris of Inda. | 4. Chas. H. Bigelow of Mass. |
| 5. Robt. Allen of Md. | 6. Geo. M. Legate of — |

- | | |
|-------------------------------|------------------------------|
| 3d CLASS. | 4th CLASS. |
| 1. Jas. L. Mason of — | 1. John W. Gunnison of N. H. |
| 2. Danville Leadbetter of Me. | 2. Henry W. Beaham of Conn. |
| 3. M. C. Meigs of Penn. | 3. Edwin W. Morgan of Penn. |
| 4. Alex. Hamilton of N. Y. | 4. Alex. B. Dyer of Misso. |
| 5. Barnabas Conkling of N. Y. | 5. John Bratt of N. Y. |

We understand that the Polish Committee having exhausted all its funds, have adjourned *sine die*, and that a statement of its expenditures will be published in a few days.

It will afford a large part of the American people great satisfaction to learn that Mr. McDuffie has resumed his seat in the House of Representatives, in improved health.

The Washington Globe of Tuesday, says:—"The Board of Commissioners under the Convention with the Two Sicilies, have terminated their fourth session. We understand that the Commissioners have disposed of all the cases ready for trial up to this date.

The French Academy of Belles Lettres has proposed for the Volney premium, for next, the following theme:

"To determine the grammatical character of the languages of North America, known under the name of Lenni Lenape, Mohegan and Chippewa."

The premium is a gold medal worth 1200 francs, which our venerable fellow-citizen, Mr. Duponceau, could win against all the world.—[Nat. Gaz.]

We have a pleasant instance, (says the National Gazette of yesterday, how the Secretary of a despotic chief may be used, in the following anecdote related by Sir Harford Bridges, in his account of his mission to Persia:

New Duties of a Secretary.—General Gardanne, on his introduction to Mohammed Ally Meerza, had presented him with a very fine pair of rifle-barrelled pistols, made at Paris, the barrels of which, the General assured the Prince, were worked with such nicety, that a ball delivered from them would fly to the distance of twenty yards, so true as to strike invariably the centre of a piastre, a piece about the size of our half crown. The Prince had received the General in a room which opened to a large walled court, and from the spot where his highness was seated to the wall was pretty much the distance for which the general had vaunted the precision of his pistol. As soon as he was dismissed, the prince turning to his secretary, who was standing by him, said, "Come, let's try the Frenchman's pistols; go and hold out your hand against the wall." The astonished and trembling secretary, after some remonstrance, found himself obliged to obey, and stand the shot.—The prince fired, and fortunately missed his mark.

A Polite Curate.—In the church service, for the thanksgiving of women, on a certain occasion, the curate of —, afraid of offending his patroness, who was a person of quality, introduced the word lady instead of women; and accordingly said, "Oh, Lord, save this lady thy servant;" when the clerk made answer, "Who putteth her ladyship's trust in thee."

Melancholly Occurrence.—Extract of a letter to the Editors of the Philadelphia Commercial Herald, dated Louisville, (Ky.) June 12.—A shocking occurrence took place here last week. A Mr. C. married Miss Buckner last week, a beautiful and interesting woman, of one of our most respectable families. On that evening Mrs. Buckner (the mother of the bride) had a large quantity of custard made, and sent to the houses of her married children. On Sunday Mrs. Foster (her daughter) was taken ill, and died in a few hours. While the company was assembling for her funeral, a daughter of her's became suddenly ill, and the funeral was postponed, that both might be buried together. Before this took place, Mrs. Buckner died; and one after the other, eight have died; and nine more are dangerously ill.

Poison having been suspected, the servants are all in prison, but there is no evidence, external or internal, to prove the charge. The contents of the stomach show no appearance of poison. The symptoms in all resemble those of Asiatic Cholera; yet no one else in town has been attacked, and not one of that devoted family who avoided the custard. All who ate of it have died or are ill. The physicians and magistrates are all in alarm and bustle, and no two people seem to agree in opinion as to the true cause of this melancholly visitation.

The above deaths from eating custard, had they occurred on "The American Bottom" in Illinois, or in those small neighbourhoods in Kentucky and Tennessee, where that singular disease, "the milk sickness," has been known for years—would have been unquestionably attributed to that complaint. The symptoms of "the milk sickness," which is always traced to drinking the milk or eating the meat of cattle affected in a peculiar manner, are, as described by the western people, precisely those of Asiatic cholera.

Since writing the above, we find the following in the Louisville Focus:

"A report is again going abroad of the prevalence of the Cholera at Louisville. There is no foundation for it. Up to this time, not one of our citizens has exhibited symptoms of that disease. The physicians, two or three days since, supposed that several individuals to whom they were suddenly called, were laboring under attacks of cholera, but the cases proved to be the effects of *poison*. The unfortunate victims were poisoned with arsenic at a wedding party on Sunday evening. Near a dozen have already died, and there are several others who cannot long survive. One family of the first respectability, is almost entirely swept off. The atrocious deed is supposed to have been perpetrated by a negro who is now in jail."

We have copied an account of a dreadful mortality in a family of Louisville, Kentucky. The following paragraph from a late number of Galianani's Paris Messenger, furnishes a similar case:

"The Courrier du Midi, of Montpellier, of the 6th instant, relates, that, after a grand dinner given by a widow lady, on the occasion of the marriage of her daughter about three weeks before, supplied by a respectable Restaurateur, out of fifty guests who partook of the feast, thirty were taken ill and showed symptoms of having been poisoned by verdigris. Antidotes were promptly administered, and all the sufferers were relieved and ultimately restored, except the mother of the bride, who expired on the morning of the 5th, after suffering dreadful agonies. This is a new instance of the danger of neglecting to be careful in having copper culinary vessels well tinned."

Sudden Deaths.—The Harrisburg (Pa.) Chronicle of Monday, states the following remarkable instances of sudden death as having occurred recently in Susequehanna township, of that county.—"On Thursday last, Isaac Diller and John Johnston. The former fell down in convulsions while at the plough. The latter carried him home, and complained immediately of sickness, fell down and shortly after expired.—They both died within half an hour."

The New Orleans Bulletin of the 5th ult. says, we understand by the late arrivals, that the Cholera has disappeared from the banks of the Mississippi above, and that there is at present no sickness on the river. There is yet some cholera in this city; there is enough to justify the extreme caution; and at the first appearance of dysentery, no matter from what cause it may be supposed to spring, medical aid should be invoked.

NEW ORLEANS JUNE 7.—As rumor is prone to exaggerate in these matters, we have taken the trouble to ascertain from the proper authorities, the number of funerals in New Orleans lately.

During the last month of May, 491 persons were buried.

During the five days of June, 90 persons were buried.

Ten years ago, the average number of interments per month, was about 120. Setting down the increase of population in New Orleans, at 59 per cent. in ten years, the monthly interments, were the city healthy, should not exceed 180.—[News.]

Sudden death.—We learn with much regret, that Col. Cyrus Baldwin, brother of the celebrated engineer, died yesterday morning at his residence in Middlesex Village. He appeared to be in his usual firm health the evening previous. The cause of his sudden decease was attributed to an affection of the heart, and we understand a *post mortem* examination was to be made to-day to ascertain the fact.—[Lowell Journal.]

It is stated in a West India paper, that the Commissioners appointed for the Colony of Demerara, under the Slavery Abolition Act, for ascertaining the average prices at which slaves were sold between 1st January, 1823, and 31st December, 1830, had closed their investigations, which fixes the average at £116 sterling. The slave population of Demerara is estimated at 70,000.

PUBLIC REVENUE IN NEW-YORK.—Revenue accrued in the District of New-York for the 1st quarter, ending the 31st March, 1834, \$3,148,455 87. First quarter, 1833, \$3,123,166 81. Increase, \$26,289 06.

These facts we have ascertained at the Custom House this morning. When it is considered that on the 3d of March, 1833, the entire duty on tea, coffee, most kinds of spice, and a great many other articles, was abolished,—and that on the 31st December, 1833, all duties on linens, linen cambrics, worsted stuff goods, manufactures of silk and worsted, and of silk coming from this side of the Cape of Good Hope, were abolished, and that on all goods of every description, one-tenth of the excess above 20 per cent. ad valorem was repealed on the same 31st of December, 1833, the above results appear to us very surprising.

They are, however, in perfect accordance with the fact which we stated a day or two since, that the number of arrivals at this port from foreign countries has been greater by 44 during the first quarter of the present year, than during the corresponding quarter of 1833, and greater than ever before, unless possibly in 1816 and '17, immediately after the war.

The reader will observe that the revenue above stated is the revenue *accrued* [not collected] during the quarters mentioned; and of course that cash duties and short credits will not affect the amount. They will also bear in mind that the importations of 1833 were uncommonly large, amounting, in round numbers, to \$109,000,000.—[Jour. of Com.]

Many of the goods on which the above revenue accrued have been sent back again, and consequently the drawback allowed will subtract from the revenue.

TO REMOVE A HARD COATING OR CRUST FROM GLASS AND PORCELAIN VESSELS.—It often happens that glass vessels, used as pots for flowers and other purposes, receive an unsightly deposit or crust, hard to be removed by scouring or rubbing. The best method to take it off is to wash it with a little diluted muriatic acid. This acts upon it and loosens it very speedily.

A PETRIFIED PAPOOSE.—Some persons employed lately in quarrying stones at Guernsey, Ohio, came across the body of an Indian child completely petrified. This extraordinary specimen was found embedded in a solid mass of rock, and has the appearance of a stone image, somewhat imperfect, to be sure, yet, on the whole, a very fair outline of a young Indian, done in lime stone. A small row of Indian beads (too hard originally to need petrification, we suppose,) was found in the same cavity.

[From the Albany Daily Advertiser.]

Coincidence.—The 20th of May—the day on which Gen. La Fayette expired, is somewhat marked in Chronological history. On that date of the month, Americus Vesputius sailed on his first voyage of discovery, and that date of the month, witnessed the last mortal agonies of Christopher Columbus.

On the 20th of May, General Lafayette, with an inferior force, baffled the British General, Grant, who, at the head of 7,500 men, attempted to surprise the Marquis, at Barren hill. Lafayette's retreat on that occasion, was pronounced to be a masterly military manoeuvre.

It was on the 20th of May, at a later period, that Lafayette's hope of a free French republic, experienced a total destruction, in the ceremonial were Napoleon Bonaparte was declared Emperor.

These coincidences may appear somewhat trivial, but they are curious, and worthy of a passing notice.

Literary.—We learn from the Boston Transcript that—

Lilly, Wait & Co. have in press, and will publish in a few days, the second number of "The Pilgrimage beyond the Sea," from the pen of Professor Longfellow. The admirers of the exquisite sketches contained in the first number, may be assured that the second is fully equal to the former. Among its best papers we would include "The Baptism of Fire," "An Old Soldier," and "The Valley of the Loire."

A valuable musical manuscript by Guillaume de Machault, who was valet de-chambre to Philippe le Bel in 1307, has been discovered in the Royal Library at Paris. It contains several French and Latin authors, ballads, &c. and concludes with a mass, which is supposed to have been sung at the coronation of Charles V. in 1364, and which proves that at that time they were acquainted with the art of composition in four parts.

Encouragement of Learning and the Fine Arts in France.—The annual expenditure of the State and of the Civil List, for the several establishments in favor of Learning and the Fine Arts, is estimated at 120,000*l.* a sum tenfold the amount of that which is expended for similar purposes in Great Britain. This sum is exclusive of various extraordinary grants of large sums of money devoted to the purchase of collections of marbles, coins, and antiquities.

Steamboat Curiosity.—A little boat called the *Caroline*, came into harbor a few days since, which was built in South Carolina, has made her way through Quebec, &c. here, and is bound, we understand, for the Mississippi, through the Lakes.—[Buffalo Journal.]

Steamboats in the West.—An official list of Steam Boats on the Western waters, on the 1st of January, 1834, gives the whole number 234, whose aggregate amount of tonnage is equal to 39,000 tons—they have cost three millions of dollars. The total yearly expense of running them is four millions and a half.—66 boats went out of service during 1831, '32 and '33—of these, 15 were abandoned as unfit for service; seven were lost by ice, 15 were burned, 24 snagged, and five destroyed by being struck by other boats—thus 51 were lost by accidents. The investments in these boats are now decidedly unprofitable—the business is overdone, and though of incalculable advantage to the valley of the Mississippi, they are too often the ruin of their owners.—[Moor's Price Current.]

Boat Race.—Two of the barge clubs, who have their boats on the Schuylkill, undertook on Saturday afternoon, to have a rowing match. The boats were the *Dart* and the *Falcon*—rowed each by six members, with a steersman, all in the uniform of their respective clubs. The distance was three quarters of a mile. The *Falcon* beat about ten yards. The race was said to have been well contested.

Distressing.—We learn from Capt. Mayhew, of the ship *Warren*, recently arrived at that port, that Capt. Charles Spooner, of the ship *Erie*, of Newport, whose extraordinary marriage to Mingatara Oruruth, a native of Otaheite Island, has been lately noticed in most of the papers of this country, was deprived of his bride soon after his marriage, under the following painful circumstances: She had gone into the water to amuse her husband with an exhibition of her extraordinary feats of swimming, for which she is said to have been very remarkable, when she was attacked by a large shark. The shark first seized her by a limb, but releasing his hold, he made another attack, and with one effort of his powerful jaws, severed her body in two. The unhappy

husband was a spectator of this awful scene, but could render no assistance.—[Bristol R. I. Gaz.]

BALTIMORE, JUNE 26th.—The *Marion*, *Morgan*, and *Sharp Shooter* Rifle corps returned to this city yesterday afternoon from the Washington Rail road, bringing with them eleven of the rioters, including one charged with murder. They were all committed to jail. The detachment left the ground at eleven o'clock yesterday morning, up to which time no further disturbance had occurred. [The detachment, composed of the Mechanical Volunteers and Independent Blues, which left this city yesterday morning on the same service, were passed about mid-day on their march to the ground.]

The London Court Journal of the 10th ultimo, describes London at this period in these terms—

"The season is unfolding prosperously. The Drawing rooms are brilliantly attended;—the last ball at Almack's was one of the best we ever saw, and graced by the appearance of seven fair *débutantes* of the highest rank, beauty, and fashion;—the Italian Opera abounds in attractions;—the English theatres, although no longer either national or classical, afford fertile sources of amusement and discussion;—the Exhibitions are all open, most of them displaying merit of a high order;—the Literary and Scientific Institutions are in full activity;—the streets are alive with equipages;—Kensington gardens and the Parks brilliant with verdure;—our aristocratic absentees have returned from the continent and are commencing their course of spring gaieties;—book-sellers, auctioneers, the shops and the places of public amusement, vie with each other in attempts to engage the notice of the public;—in a word, all those objects of attraction which it has been our business and pleasure to illustrate, are re-assembled in renewed interest around us, to excite us to further activity and animate us with freshened energies."

CHINA.—The Chinese Repository, published at the end of February, has the following paragraph:

Since the 9th inst. this city (Canton) has presented a scene of festivities, rejoicings, and congratulations which is usual throughout the Chinese empire during the holidays of new year. In the mean time there has been an unusual amount of suffering, especially among the lower classes of the inhabitants. Great numbers of the poor, who were rendered houseless and penniless by the inundation last August, have perished during the winter. No one can describe the wretchedness of some of these sufferers, and none but an eye-witness can conceive it. Morning after morning, and in the same place, we have seen two, three, and four dead bodies; and in the narrow compass of a few rods, we have seen at noon-day more than 20 individuals stretched on the ground half naked, and either senseless or writhing in the agonies of death, caused by hunger. No man cares for their bodies; none for their souls.

We learn from the Journal of Commerce that letters of a recent date from Liberia, were received here yesterday. They announce the death of Mr. Matthew Laird, and Mrs. Laird, missionaries of the Western Foreign Missionary Society, who sailed from Norfolk on the 6th November last, and arrived at Liberia on the 31st of December.

They died of the African fever, to which almost every new comer is subject. Rev. Mr. Finney, the acting Governor, had been very ill, but was recovering. The decease of Mr. and Mrs. Laird will of course be seized upon by Immediate Abolitionists as an evidence that the frown of Providence rests upon the Colony, or at any rate, that a Colony so invaded by disease and death ought not to be supported. Weak minds may possibly be operated upon by such suppositions; but none others can be. The same argument precisely, and with still greater force, might have been urged against the Colonies at Plymouth and Jamestown; and may now be urged against the mission at Bombay. Jamestown and Plymouth are now healthy, and have been so for a century; Liberia may be so too, after the surrounding country is cleared up and cultivated. It would be strange indeed, if the civilization of a Continent was to be accomplished without some loss of life. But if loss of life is so dreadful a thing to the Abolitionists, then we say that ten lives are saved by the Colony, in the prevention of the Slave-trade for two or three hundred miles along the coast, where one is lost. When a few more such Colonies as Liberia, Sierra Leone, and Cape town, are planted along the coast, the Slave-trade will be dead forever.

Ship on Fire at Savannah.—We express our acknowledgements to Captain Sisson, of the schr

Exit, for the following account of a fire on board the ship *Hull*, lying in the harbor of Savannah:

"SAVANNAH, JUNE 16.

"The ship *Hull* of Boston, Captain Knox, laden with cotton, for Liverpool, ready for sea, is on Fire, supposed to be in the after part of the lower hold.—Smoke was discovered coming out of her after hatch early this morning, when she was immediately dropped down below the town, and grounded on about 200 yards from the lower wharf. There are two engines in flats, playing into her, and they are knocking out the forward lumber port to allow her to fill. There are also flats alongside taking out cotton. The bottom on which she is aground is hard sand, and the tide is flowing. Her cargo will be saved, partly damaged; and I have no doubt the ship will also be saved. N. B. Sisson.

"N. B.—Main hatch is nearly burnt through.—With haste. N. B. S.

[The *Hull* had cleared with a cargo of 928 bales upland, and 8 bales Sea Island Cotton on board.]

The arrival yesterday of the ship *Josephine*, from Ireland, was quite an unexpected circumstance.—This ship formerly sustained a high reputation, and was considered one of the fastest sailers out of this port. In December, 1832, she was wrecked in Donegal Bay, where she laid nearly buried in the sand for about fifteen months, and was considered as totally lost. In a heavy gale and very high tide last spring, the ship was driven from her bed upon a potato field near the beach. In this situation, after being stripped of her copper, she was observed by an American captain, who, finding her frame was sound, purchased her as she lay, and employed workmen at 6*d.* each per day, to dig a canal in which he could convey her to the sea. The workmen had only just completed this canal, when another high tide fortunately arose, and swept the ship into deep water. She was then taken to Sligo, repaired, and has safely arrived again at her original home.—[Merc. Adv.]

The Missouri (St. Louis) Republican of the 9th inst. states that the nett profits of the Orphans' Fair, held in that city last week, amounted to \$1,505.

A lady who died in England in 1816, bequeathed to six of her horses an annuity of £50 each. These happy and well-fed horses died at the respectable ages of 28, 29, 31, and 33. The last but recently departed this life, having enjoyed his annuity more than seventeen years, and received about £800.

THE CHEROKEES.—In the Senate on Friday, Mr. White of Tennessee, from the Committee on Indian Affairs, in answer to the petition of John Ross and others, of the Cherokee Tribe of Indians, reported the following resolution:

Resolved, That the President of the United States be authorized and requested to cause to be ascertained upon what terms the claims of the State of Georgia and its citizens, to the lands of the Cherokees east of the Mississippi, can be extinguished, and communicate the same to Congress at the next session—and that the further consideration of the memorial be postponed to that time.

Crops in Illinois.—A late paper from Peoria says: "We are informed by the farmers in our vicinity, that the crops have every appearance of being productive. We have had, during the last few days, a succession of warm showers—the fields of small grain never looked better."

The great error in vaccination is said to be the removing it from one subject to another. The original infection, or one remove, will, it seems, always be found a certain antidote to small pox; but after one remove, it is affirmed to be unsafe, and hence is brought into unmerited disrepute.

Coroner's Inquest.—A coroner's inquest was held on Monday afternoon on the body of Mr. George Clayton, which was found floating in the river at the foot of Reed street. Mr. Clayton has been missing for some weeks, and was married only a few days before he disappeared. Verdict—death from accidental drowning.

Pity.—In passing, said a neighbour, a Porter House on one of the Avenues, I saw standing by the fence, a horse just ready to die with old age, and hard and cruel usage. Whilst I was looking at and pitying the once noble, but now most miserable animal, an old man with trembling limbs came staggering and loitering out of the door, and bringing up near the horse, began to belch and vomit, exhibiting the most disgusting, painful, and pitiable sight. Ah! said I, is the monster in human shape who has caused such misery and degradation to come before me?

It will be seen by our Washington letter to-day, that public surmise in relation to the late nominees to the Senate, is fully confirmed. Mr. Stevenson and Mr. Taney have been rejected, and Mr. Butler confirmed without a division. The National Intelligencer gives the vote on Mr. Taney's nomination a little different from our correspondent, making it 18 and 28 instead of 30, 15.

THE POLISH SCYTHMAN.—A finished lithograph, by a young Pole, is now attracting much attention at the print shops in Broadway. It represents a Polish Scythman in the full costume of that "indigenous soldier." The impressions are sold for the benefit of the brave Exiles.

Hercules, Jun.—Signor Schiatta, the Italian, now exhibiting at Walnut street Theatre, is one of the most extraordinary wonders of the day. His feats of strength are certainly the most marvellous efforts ever witnessed in this city. He will lift ten, and in some instances, twenty times as much as any other person. It is said he can balance any thing but the Post Office accounts.—[Philad. Intell.]

Surgical Operation.—A very large tumor was removed, a few days since, from the side of a young lady, by Dr. Smiley, of this city. Some idea may be formed of its dimensions from the fact, that after the operation, which diminished one-third of its size, it measured twelve inches and a half in circumference, and weighed only half an ounce less than one pound. No bad symptoms took place, and the young lady has entirely recovered from the effects of the operation. Few instances have occurred in which an operation of such magnitude has been attended with so few bad effects.—[Phil. Nat. Gaz.]

MORE SHIPWRECKS.—The Montreal Gazette, of Thursday, contains some particulars of two other losses at sea, not hitherto reported. One, the Proselete, of Limerick, with 223 passengers, all of whom have been safely landed at Richibucto, (Nova Scotia,) in a lamentable state of misery, and the other name unknown, but described as being from the west of England, with 280 passengers, 7 of whom only are saved.

[British square rigged vessels bound to the British Colonies, lost this season, including the above, 23. Lives lost, 734, besides all on board of a bark unknown. Total number of passengers arrived at Quebec to 14th instant, 14,137. Consequently, the lost are to the saved as 1 to 19 and a fraction. Of all the emigrants bound to this port this season, not one has lost his life by shipwreck.—[Jour. Com.]

"Isn't there a large tree standing before your door?" inquired a wag of a green looking Jonathan from the country. "Yes—why?" was the answer. "Because," said the wag, "I thought from your appearance that you grew in the shade."

SURVEYORS' INSTRUMENTS.

Compasses of various sizes and of superior quality warranted.
Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by
E. & G. W. BLUNT, 134 Water street,
corner of Mulienlane.

ALBANY SEED-STORE AND HORTICULTURAL REPOSITORY.

The subscriber having resumed the charge of the above establishment, is now enabled to furnish traders and others with FRESH GARDEN SEEDS, upon very favorable terms, and of the growth of 1833, warranted of the best quality.

The greatest care and attention has been bestowed upon the growing and sowing of Seeds, and none will be sold at this establishment excepting those raised expressly for it, and by experienced seedsmen; and those kinds imported which cannot be raised in perfection in this country; these are from the best houses in Europe, and may be relied upon as genuine.

It is earnestly requested whenever there are any failures hereafter, they should be represented to the subscriber; not that it is possible to obviate unfavorable seasons and circumstances, but that satisfaction may be rendered and perfection approximated.

Also—French Lucern, White Dutch Clover, White Mulberry Seed, genuine Mangel Wurtzel, Yellow Locust, Ruta Baga, and Field Turnip Seeds, well worth the attention of Farmers.

STEPHENSON,
Builder of a superior style of Passenger Cars for Railroads.
No. 264 Elizabeth street, near Bleecker street,
New-York.

RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part of New-York and Harlem Railroad, now in operation.

RAILROAD CAR WHEELS, BOXES AND OTHER RAILROAD CASTINGS.

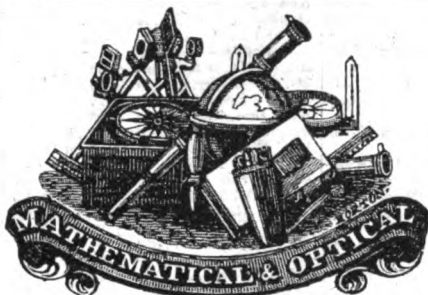
Also, AXLES furnished and fitted to wheels complete at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to. Also, CAR SPRINGS.

Also, Flange Tires turned complete.
J8
ROGERS, KETCHUM & GROSVENOR.

NOVELTY WORKS,

Near Dry Dock, New-York.

THOMAS B. STILLMAN, Manufacturer of Steam Engines, Boilers, Railroad and Mill Work, Lathes, Presses, and other Machinery. Also, Dr. Nott's Patent Tubular Boilers, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited.



INSTRUMENTS.

SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

EWING & HEARTTE, at the sign of the Quadrant, No. 53 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude. For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewing & Heartte.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable. They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES P. STABLER,
Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' Instruments of your Manufacture, particularly Spirit levels, and Surveyors' Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These Instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

WILLIAM HOWARD, U. S. Civil Engineer.

Baltimore, May 1st, 1833.
To Messrs Ewing and Heartte.—As you have asked me to give my opinion of the merits of those Instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming acquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprise so well merits, I remain, yours, &c.

B. H. LATROBE,
Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them, upon application, to any person desirous of perusing the same.

LOCOMOTIVE ENGINES.

THE AMERICAN STEAM CARRIAGE COMPANY, OF PHILADELPHIA, respectfully inform the public, and especially Railroad and Transportation Companies, that they have become sole proprietors of certain improvements in the construction of Locomotive Engines, and other railway carriages, secured to Col. Stephen H. Long, of the United States Engineers, by letters patent from the United States, and that they are prepared to execute any orders for the construction of Locomotive Engines, Tenders, &c. with which they may be favored, and pledge themselves to a punctual compliance with any engagements they may make in reference to this line of business.

They have already in their possession the requisite apparatus for the construction of three classes of engines, viz. engines weighing four, five, and six tons.

The engines made by them will be warranted to travel at the following rates of speed, viz. a six ton engine at a speed of 15 miles per hour; a five ton engine at a speed of 18 miles per hour; a four ton engine at a speed of 23 1/2 miles per hour. Their performance in other respects will be warranted to equal that of the best English engines of the same class, with respect not only to their efficiency in the conveyance of burdens, but to their durability, and the cheapness and facility of their repairs.

The engines will be adapted to the use of anthracite coal, pine-wood, coke, or any other fuel hitherto used in locomotive engines.

The terms shall be quite as favorable, and even more moderate, than those on which engines of the same class can be procured from abroad.

All orders for engines, &c. and other communications in reference to the subject, will be addressed to the subscriber, in the city of Philadelphia, and shall receive prompt attention.

By order of the Company,
WILLIAM NORRIS, Secretary.

December 2d, 1833.

For further information on this subject see No. 49, page 772, Vol. 2, of Railroad Journal.

RAILWAY IRON.

	Ninety-five tons of 1 inch by 1/2 inch,	Flat Bars in lengths of 14 to 15 feet counter sunk holes, end cut at an angle of 45 degrees with splitting plates, nails to suit.
200	do. 1 1/2 do. 1/2 do.	
40	do. 1 1/2 do. 1/2 do.	
800	do. 2 do. 1/2 do.	
600	do. 2 1/2 do. 1/2 do.	
	soon expected.	

250 do. of Edge Rails of 36 lbs. per yard, with the requisite chairs, keys and pins.

Wrought Iron Rims of 30, 33, and 36 inches diameter for Wheels of Railway Cars, and of 60 inches diameter for Locomotive wheels.

Axles of 2 1/2, 3, 3 1/2, 3 3/4, and 3 1/2 inches diameter for Railway Cars and Locomotives of patent iron.

The above will be sold free of duty, to State Governments and incorporated Governments, and the Drawback taken in part payment.

A. & G. BALSTON,
9 South Front street, Philadelphia.

Models and samples of all the different kinds of Rails, Chairs, Pins, Wedges, Spikes, and Splicing Plates, in use, both in this country and Great Britain, will be exhibited to those disposed to examine them.

ENGINEERING AND SURVEYING INSTRUMENTS.

The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely new: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy; also, a Railroad Goniometer, with two Telescopes; and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.

WM. J. YOUNG,
Mathematical Instrument Maker, No. 9 Dock street, Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested:

Baltimore, 1832.
In reply to thy inquiries respecting the instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad. I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all Instruments of the kind are liable.

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the van's sight, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to later angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

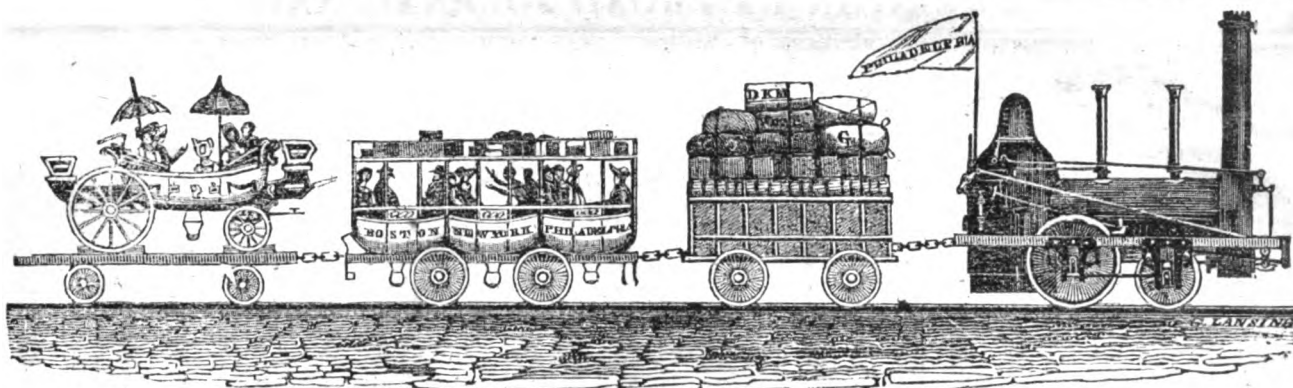
Respectfully thy friend,
JAMES P. STABLER, Superintendent of Construction of Baltimore and Ohio Railroad.

Philadelphia, February, 1833.
Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors.

E. H. GILL, Civil Engineer.
Germantown, February, 1833.
For a year past I have used Instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these Instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY R. CAMPBELL, Eng. Philad.,
German and Norristown Railroad



AMERICAN RAILROAD JOURNAL, AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT No. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, EDITOR.]

SATURDAY, JULY 5, 1834.

[VOLUME III.—No. 26.]

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, JULY 5, 1834.

The citizens of Taunton, Mass., are about constructing a branch from that place, to meet the Boston and Providence railroad—distance about 10 miles—probable expense \$80,000.

NEW LOCOMOTIVE.—By the ship New-York, the Saratoga and Schenectady Railroad Company have received another Locomotive Engine in addition to the one now in use on their road. It is from the celebrated manufactory of Stephenson & Co., and will probably be ready for operation in the course of ten days.

IRON WHEELS.—We saw a waggon in Court street this forenoon, which, from the novel construction of the wheels, excited considerable curiosity in the passers-by. They were made entirely of iron—the outer part of the wheel was formed from a single piece of iron about an inch and a half square—the spokes were round, and five-eighths of an inch in diameter. The naves were constructed in a new and ingenious manner, by which the friction is much diminished; and the whole appearance of the wheels conveyed the idea of usefulness, neatness, and simplicity.

On inquiry, we learned that these wheels were calculated to sustain a weight of a ton and a half—and that wheels of the ordinary construction, to sustain so great a weight, would weigh about the same as these newly invented wheels. The expense also, we were informed, will not vary materially from those in common use. They were manufactured by Mr. Hale, of South Boston; and we believe this is the first attempt of the kind to manufacture all the parts of the wheel of iron. The advantages to be derived from this invention are neatness, safety, and durability.—[Boston paper.]

RAILROADS IN VIRGINIA.—We fully agree with our correspondent as to the importance of the two, or more properly one, railroads to which he refers in the following communication, and we trust we have good reason to anticipate an early movement towards their construction. Virginia has, it is true, done very little towards the improvement of her natural advantages—too little, indeed, for the station she has always maintained amongst the States of the Union; but we think we perceive the dawn of a better day for her. Petersburg has led the van; Norfolk is following her, and Richmond must in self-defence do something, or she will be left so far behind as not to be thought of in the same day; and she will hardly stand that. Richmond will attend to the construction of a railroad to Fredericksburg, Fredericksburg to the Potomac Creek, and then Petersburg or Richmond, or both, will finish the chain by making a railroad between those two towns, which will intersect the State.

RAILROADS IN VIRGINIA.

To the Editor of the Railroad Journal.

There are two works in Virginia of the most useful and important character, but which will not be undertaken for some time yet to come, on account of the want of energy or interest of the citizens of that section of the country in their completion. They are railroads, one from Ck. Landing to Fredericksburg, (a little over ten miles in length), and the other from Fredericksburg to Richmond (about sixty miles.) They are on the great southern mail route from Washington City to New-Orleans, and are, (the former more particularly), essentially necessary to the speedy transportation of the mail and passengers. From Fredericksburg, (a distributing post-office), the mail routes diverge to Maysville and Guyandotte westward, and southward to Richmond, Norfolk, Petersburg, Charlottesville, &c., into North and South Carolina, Georgia, &c. The mail at present is conveyed in steamboats from Washington to Potomac Creek, (a tributary to the Potomac river), 60 miles, and thence in stages to its various destinations; and owing to the miserable state of the roads throughout Virginia, more particularly during the winter—I refer you to the far-famed poem of Moore's, on

his ride over a portion of them, for a better description than I could give)—there is no calculating with certainty on the arrival of the stages at the proper time, or of their bringing the mails with them when they do come, (notwithstanding the extra allowances of our worthy postmaster.)

A survey for a railroad from Potomac creek landing to Fredericksburg, was made in the spring of 1832, and the line located across the peninsula, dividing the waters of Potomac and Rappahannock rivers. From some cause or other, only a common turnpike was constructed over a portion of the line, and the attention of the citizens generally, and of the Legislature, being too much absorbed at the time by the James River and Kenawha Canal, to feel interested in any other work of internal improvement, very little of the stock of this road was subscribed for, and no interest felt for its construction. The report of the engineer who surveyed and located this road, not having been printed, I cannot procure a copy, of which I should like to send you one, as it contained much statistical information respecting that section of the country. Yours, respectfully,

H. N. C.]

HUDSON AND ERIE RAILROAD.

To the Editor of the Railroad Journal.

I find, from the late numbers of your Journal, that there is some prospect of an entire survey being made of the Hudson and Erie Railroad. The feelings of the citizens of the lower part of the state have led them to determine on the route of this railroad through the lower tier of counties, without probably reflecting on the possibility of a better, cheaper, and more practicable route elsewhere, for accomplishing their object. Upon reference to a map, you will find that the streams watering that section of the country generally run parallel to each other, with lofty and continuous ridges of mountains between them. These ridges are most generally unbroken, affording no opportunities for the passage of a railroad, except at an immense expenditure of money for stationary power, more, in fact, than could be warranted, I think, by the travel and transportation over such a route, for years, at least, to come. Why not then seek for the best location of such a work, without limiting the researches of the engineer to one particular route

within the confines of a portion of one state! Instead, for instance, of commencing at Tappan or Nyack, and crossing the Catskill mountains, where there are several continuous and successive ridges to be crossed, and all (or most of them undoubtedly) requiring separate stationary engines (and some of them several) to overcome the ascent, start from opposite the city of New-York, and taking the route of the Hudson and Paterson railroad to Paterson, (where you have even now a road constructed to your hand by way of commencement,) turn northward, thence following up the valley of the Rancocus, a branch of the Passaic, (I think,) and crossing, at the most suitable place, the ridge dividing it from the valley of the Ramapo, up which you pass into Orange county. The Deer Park Gap, in the Neversink mountains, would here be a good place for crossing that range into the valley of the Neversink river, down the valley of which will lead to the Delaware river. Here you can follow up the valley of the Delaware nearly to the New-York and Pennsylvania line, and finding the most convenient crossing place, pass the intervening ridge to the waters of the Susquehannah; thus on to lake Erie.

These hints I throw out more as an inducement to those interested, to give to the engineer unlimited power to locate the road over the best route, whether passing through New-York alone, or passing into New-Jersey and Pennsylvania, than through any certainty on my part of its being better than any other. It will moreover become a national road in a great measure, and the wishes of the citizens of the lower counties of New-York can be gratified by the construction of lateral roads into the several counties, (following the valleys of the several streams to effect that object,) and the object of a road better fulfilled by giving a wider sphere for the action of the road, and more extended means of increasing its resources after its construction.

Take these hints as a basis for any remarks you may wish to make on the subject. I have hardly time to throw them into proper shape for publication. Yours, respectfully,

H. N. C.

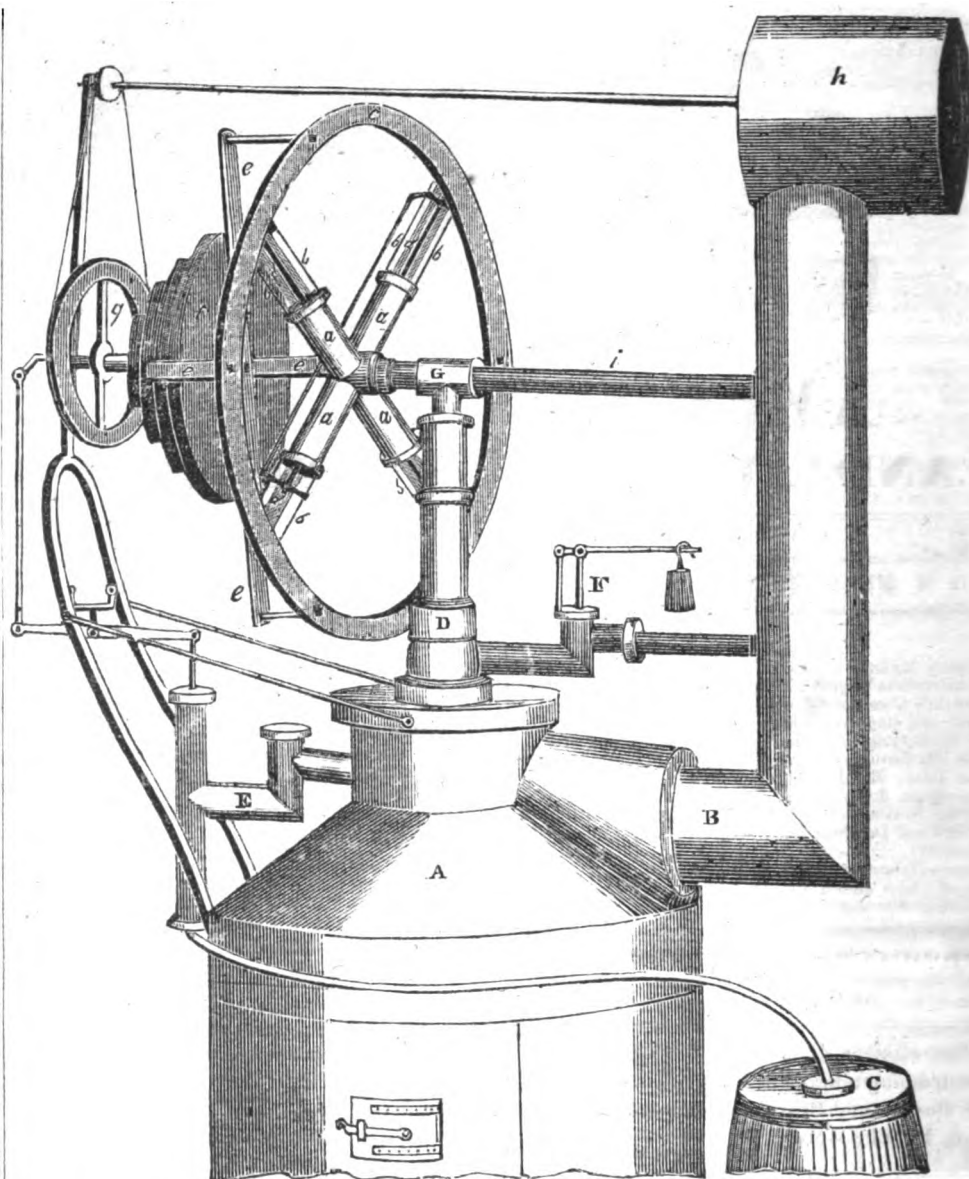
A Compound Reciprocating Rotary Steam Engine, and an Improved Boiler, invented by SIMON FAIRMAN, of Lansingburgh, New-York. [From the Mechanics' Magazine and Register of Inventions and Improvements.]

This engine and boiler may be used separately, or the two together, as may be most convenient; the engine may be connected with any other boiler, and the boiler with any other engine.

This invention presents to the public, in a fair and practical form, the long-sought desideratum of a steam engine producing a rotary motion, without undue complication and liability to disorder; without the inconvenience of fly wheels and cranks; and giving the full power of steam without being subject to the constant loss of impetus by the action and re-action of heavy masses of metal.

It will be easily discovered, by examining the drawing, that this engine and boiler, when connected together, will occupy but a very small portion of the space required by the engines and boilers of the same power in common use, and that the weight of both engine and boiler are equally reduced; and as the cost, especially of the engine, is also reduced, at least in the proportion to its size and weight, it follows of course that, in all cases where a rotary power is wanted, it must be entitled to a preference equal to all those savings and conveniences, and for all locomotive purposes, still much greater.

And it must be no less obvious, on in-



specting the plan of the boiler, that, besides its compactness, it is capable of producing a given quantity of steam with less fuel than is required for the boilers now in use.

As in the annexed drawing the engine and boiler are connected together; and, as to communicate an idea of the boiler, it was necessary to give a sectional view, showing the form of the inside, the description will require a kind of mixed reference alternately from one drawing to the other.

A, figure 1, represents the boiler entire, the inside of which is explained by figure 2. The furnace door is shown in figure 1, through which the fuel is inserted into the furnace, b, figure 2. The water is contained in three concentric double hollow cylinders, numbered in figure 1,—1, 2, 3. It is received from the supply pump, E, figure 1, into the outer cylinder, No. 1, and passes thence through bent tubes, a, a, into the inner cylinder, No. 3, which forms the furnace, from which it passes through the tubes, c, c, figure 2, into the centre pan at the top, d, which pan is connected with the middle cylinder, No. 2, from which enclosure and pan it goes through the upright or main conductor, D, figure 1, to the engine.

The fire goes from the furnace, b, and the top of the inner cylinder, thence down between that and No. 2, and, passing under No. 2, goes up between that and No. 1, and

out through the small pipe, B, figure 1; and, when necessary, the draught is accelerated by a blower in the cylinder, n. The bottom of the furnace has a grate and ash pan, which need no description.

The spaces between the double cylinders, and in the centre pan, in which the water and steam are contained, are shaded in the sectional view, and the furnace and spars between the cylinders through which the fire passes are left white.

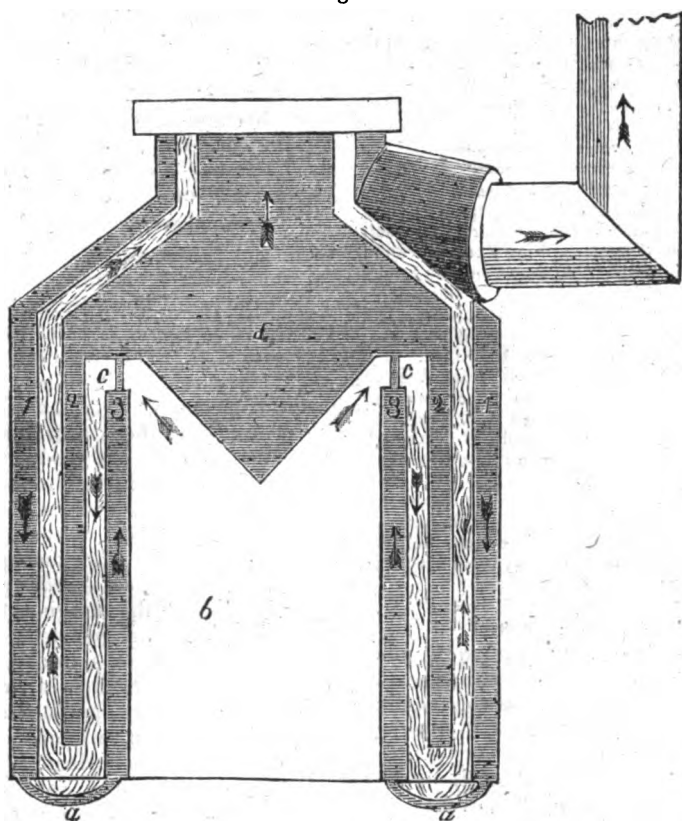
C, figure 1, represents the water tank; F, the safety valve; G, the horizontal pipe forming part of axis, through which the steam is conducted to and from the engine.

a, a, a, a, are four cylinders, in all respects similar to those of the common reciprocating steam engine; which cylinders stand at right angles with each other, with their bottoms resting upon a cylindrical hub, or centre; the cylinders of course forming a cross.

b, b, &c. are the slide rods, part of which only are seen. The bottoms of the slide rods are attached to the flanges round the tops of the cylinders, and their tops to a rim of cast iron, c, which rim also steadies and supports the tops of the cylinders by four straps, or parts of arms, d, d, d, d, which are bolted to the tops of the cylinders.

e, e, e, e, are four arms, connected with said rim by studs of sufficient length to leave

Fig. 2.



room between said arms and the cylinders for the connecting rods to revolve, and to which arms is attached the main or driving pulley, *f*, or in place thereof a cog-wheel, as the case may require.

The connecting rods and cross-heads being mostly hid in the representation, are so nearly in the common form as to need no description. But the feet of the said connecting rods are connected together by a moveable joint, so as to revolve round a centre-pin, which is removed from the centre round which the cylinders revolve, just half the length of the stroke of the pistons.

The steam is conducted through a hole lengthwise in the main axis *G*, and out through a hole in the side thereof into the bottom of each cylinder successively, as they revolve.

On the side of each cylinder is a tube, passing from the bottom to the top, and also connected at the bottom with that which lets the steam into the bottom of the opposite cylinder, so that when the steam is let into the bottom of one cylinder it enters the top of the one opposite; and as the feet of the connecting rods revolve round a centre at some distance from the centre of the main axis, as the pistons act and re-act, the cylinders must of course revolve round the axis; and when each cylinder has passed round to the opposite side from whence it filled, the steam escapes through a hole on the opposite side of the axis into a hole lengthwise of the axis, and parallel to the one by which it entered, and goes off through the discharge pipe *i*.

Mr. F. will engage to construct an engine and boiler of fifty horse power, of strong and permanent workmanship, which (both engine and boiler) shall stand on a circle of six feet diameter, and will not vary much in weight from three tons. And operating with a steady rotary impulse and without any jar, its operation will be much pleasanter in steamboats, and also prevent the injury done

to the boats by the constant racking motion of the engines now in use.

This engine and boiler will be in operation in a few days at 246 Water street, New-York.

Since the above was in type, we have received the following from Mr. Fairman:

To the Editor of the *Mechanics' Magazine*:

SIR.—However I may be reduced, by the misfortune, or rather the folly, of having undertaken to invent useful mechanical improvements, my pride is not so far overcome as to be willing to ask any services on the score of charity; but if, from any other motive, you should see fit to give this a place in your Magazine, I wish you better remuneration for so doing than to meet the fate of an inventor.

I had long been led to believe that a rotary steam engine, simple, operative, and sure in its construction, with an efficient boiler, both so compact, and consequently light, as not to overburthen their own power, and peculiarly adapted to locomotive purposes, was a desideratum for which the enlightened public would liberally reward the inventor, if such an inventor could be found. I had good authority for so believing. Many respectable writers on the subject of steam power, have noticed the importance of such an invention, but all I have seen have considered it impracticable.

Mr. Nicholson, in his *Operative Mechanic*, (Philadelphia edition, page 206,) says: "All steam engines, as yet noticed, have their action by the movement of a piston, in a cylinder, and act by what is called a reciprocating motion. In engines of this description a very considerable degree of power is expended in arresting the motion of the different working parts, and putting them into action in a contrary course. This has claimed much attention of engineers, and

many attempts have been made to construct an engine in which the action of the steam should operate in a continuous manner, without bringing the parts to a state of rest."

Again he remarks, (page 213,) "The reciprocating motion in steam engines is a loss of power, which cannot be denied, for the momentum of the beam and other parts, passing in one direction, have suddenly to be arrested and moved in the opposite direction, which produces a loss of power."

"Rotary action has been sought, therefore, with propriety, but has not yet been attained with advantage."

Since Mr. Nicholson wrote the foregoing, the importance of locomotive steam powers has nearly doubled, and yet I have known of no attempt which was likely to succeed in effecting the desired object.

With these views of the subject, and believing, or at least hoping, it was practicable, I undertook, and have no hesitation in stating, that I have effected all that the subject required. I have constructed an engine and boiler as little liable to disorder, and as easily kept in repair, as any other, and, I believe, with at least double the power, in proportion both to the cost and weight, of any which has come to my knowledge.

But my want of pecuniary means compelled me to let the engine and boiler which formed the first experiment, and which could not be expected to be perfect, go out of my control, and be placed where, by awkward management, if it be not condemned, it will discredit rather than benefit the invention. No man of judgment would expect perfection in a first experiment; but fortunately there was no mistake perceived in the engine, and but for a slight miscalculation in the boiler, I would not wish my reputation to stand, as an inventor, on a better foundation.

I cannot now invest the necessary sum in materials to exhibit my invention to the public, but if any gentleman or company interested in procuring the best locomotive engine and boiler, after due examination of my plan, will furnish materials, I will hazard all the labor of constructing them at short notice, and will guarantee, as far as my labor goes, that they shall not vary essentially from the following calculations:

A boiler, which shall expose 160 feet of heating surface to the water, and shall possess sufficient strength to work steam under 100 lbs. pressure to the inch above the atmosphere, and which, of course, must produce a sufficiency of steam for a fifteen or sixteen horse power; an engine with 4 cylinders, 6 inches diameter, 18 inch stroke, making four double strokes at each revolution, and 50 to 60 revolutions per minute, working off from 78 to 94 feet of steam.

The whole engine, boiler and furnace, shall only occupy a circular space of three feet six inches diameter; and shall weigh less than a ton. A boiler and furnace sufficient for a fifty horse power shall stand on a circle six feet in diameter.

All which facts are respectfully submitted by the public's humble servant,

SIMON FAIRMAN.

P. S.—I have no wish nor reason to find any fault with the conduct of the gentleman in whose hands my steam engine is placed in New-York. I have found nothing ungentlemanly or unfair in his conduct. The only difficulty is, the engine was taken away prematurely.

S. F.

The Steam Engine.—Security against accidents from the explosion of steam, being a subject of such extreme interest to the community, we insert the annexed report, made to the House of Representatives on the 26th ult., by Mr. White, of Louisiana, from the select committee to which was referred the memorial of Benjamin Philips of Philadelphia, who suggests a contrivance by which the double advantage is obtained of increasing the power of the engine, and at the same time preventing mischief from explosion.—[Nat. Intel.]

The Select Committee to which was referred the memorial of Benjamin Philips, of Philadelphia, report: The object of the memorialist is to invite the attention of Congress, and the public generally, to certain improvements devised by him in the use and structure of the steam engine. The model of his apparatus accompanied by drawings and diagrams, illustrative of its principles, have been submitted and examined. Whatever other advantages may be supposed to be combined in the scheme, the committee have considered it chiefly, if not exclusively, in reference to its comparative safety, or exemption from the danger of explosion.

It seems to be a point conceded by scientific observers, that, among the primary causes of explosion in steam boilers, one of the most prominent may be traced to the want of a constant and regular supply of water, while the engine is in action. The usual means employed, as the committee are advised, both for supplying the consumption of the boiler, and for ascertaining the quantum of water in that receptacle, are inadequate and uncertain. The forcing pump is liable to derangement; and when the water has fallen so low as to superinduce the circumstances of danger, neither the common gauge-cock, nor the common safety valve can be relied on for an accurate indication of the state of things so essential to be known. By the plan submitted, these effects appear to be remedied. A constant and uniform supply of water, and a test water gauge, indicating to the eye, at any moment, the precise level of the fluid in the boiler, form a part of the melioration suggested.

But what appears to the committee to be the distinguishing feature of the plan, is that it contemplates the employment of the steam at any given pressure, without a corresponding stress on the boiler. The result is obtained by generating the steam at a very moderate pressure on the boiler, from whence it is conveyed for use, to one or more receivers, in which, before it is applied as the momentum to the engine, it may be raised by flues heated from a separate furnace, to any required degree of elasticity.

The committee are of opinion, that if the scheme be feasible, of which they do not doubt, it must of itself be an important step towards the GRAND DESIDERATUM. Confined in a separate reservoir, not in immediate connexion with the boiler, the steam, however rarefied, would not be liable to be suddenly injected with water, a process which all concurring experience proclaims to be the proximate cause of many of the most dreadful accidents that have occurred.

The form and position of the contemplated receiver is believed to present another condition of security. Placed vertically on the deck, with different chambers or compartments connected by valves, the steam at its greatest tension naturally rushing through the valves into the upper chambers of the recipient, if ever explosion should take place, it would be a mere effusion of steam, and not of heated water; and the discharge would be upwards, into the open air, leaving untouched the passengers and the property embarked in the vessel.

There are other particulars in the mechanism, of the usefulness of which, practical engineers alone are competent to form an accurate estimate. It will suffice to say, that as a whole, the committee consider the contrivance as reflecting credit on the science and ingenuity of the proprietor, and that his plan is worthy of a full and fair experiment.

On the question as to the power and the inexpediency of aid and co-operation on the part of the Government in experiments of the kind, the committee have come to an affirmative conclusion. When it is considered how intimately the subject matter connects itself with the general welfare, looking to the protection of the lives and property of the whole people, that it involves considerations of naval and national defence, as well as the general interests of commerce, it is not thought that any valid opposing argument can be drawn from the want of power, much less objection be raised on the score of policy.

The committee have thought proper to recommend

a small sum to be placed at the disposal of the Secretary of the Navy, to test the improvements in this branch. It is believed that a reasonable expenditure of the public money for this subject, would coincide with the universal sense, and meet the applause of the nation. The knowledge of the mode of controlling and directing with safety this powerful, but hitherto dangerous, agent in the affairs of men, would be cheaply purchased at the cost of millions.

TRENTON, (N. J.) JUNE 28.—*Delaware and Raritan Canal.*—On the 25th inst. a large Barge from the Delaware and Chesapeake Canal, left Bordentown in the morning, with the Directors of the Company and a number of the Stockholders on board, on an excursion of inspection of the locks, bridges and other works of the canal, and arrived at Trenton about 12 o'clock. She then went up the feeder as far as Lambertsville. On the following day the Barge, with the Directors, &c. proceeded on the main canal hence for New Brunswick. The canal, we understand, is now open for the passing of shallops, &c. from the Delaware to the Raritan—the supply of water is good, and appears to be abundant for a depth of 6 and 7 feet.

A large supply of water was let into the Canal of this Company on the 24th inst. On the night following, the embankment on the west side near the Assanpink, gave way, occasioning a heavy breach, which will take a week or more to repair.

[From the *Lansingburgh Gazette.*]

MR. EDITOR,—I beg leave through the medium of your paper, briefly to notice several communications in your two last numbers, of which I have the honor to be the subject.

I utterly disavow having knowingly in my composition a particle of ingratitude; and as I have no reason to doubt that the pieces alluded to were dictated by a spirit the most friendly for my interest, I as sincerely reciprocate to them every kind feeling which grateful sympathy can dictate.

I am well aware, however, from long observation, confirmed by a good share of experience, that whoever attempts to lessen the burden of Labor, or render it more productive, by the invention of a labor-saving machine, not only sets himself up as a mark, like a man in the pillory, for men of feeling to pity, and fools to throw rotten eggs at, but puts himself upon a fair chance to end his days in a poor-house or a prison; and I have the mortification to confess that something, which I have reason to fear is a radical defect in my constitution, has placed me among that unfortunate class of beings called inventors.

But I beg leave to state, that inventors, (poor wretches,) have feelings, and sometimes even pride, as well as other people; and as I have a little share of that added to my other misfortunes, I wish those respected friends of mine to consider that it cannot but be painful to me to be exposed as an object of public sympathy. I have been foolish enough to invent some labor-saving improvements, and men have been benefitted by them who seldom thanked me, and much more seldom paid me; and it is true, I have lately invented and constructed a *steam engine*, on a plan which, whatever may be its mechanical force, will force its way into use, and will benefit the world when I am forgotten. And it is equally true, that it has found its way out of my hands, without any fair compensation; but, thank Heaven, I still enjoy health, and strength, and air, and sometimes sun-shine, as plentifully, perhaps, as if I had never invented any thing; and if Heaven will continue me these blessings, and my friends will favor me with such jobs as will occupy my time, and keep me from committing any more acts of invention, I

will thank them more for such patronage than for ten times the amount in commiseration.

SIMON FAIRMAN.

Lansingburgh, June 3, 1834.

Animal Mechanics, or Proofs of Design in the Animal Frame. Part II., showing the Application of the Living Forces. [From the Library of Useful Knowledge.]

(Continued from page 343.)

Here we find a very beautiful muscular apparatus which is necessary to the perfect adjustment of these cords. The cords are attached to small muscles called *columnæ carneæ*, C C, or fleshy columns, which at their other extremities are incorporated with the muscular wall of the ventricle itself. The use of these muscles is now to be explained. Had the tendinous cords of the valves been tied to the inside of the wall of the ventricle, without the intervention of these muscles, as the walls of the cavity approach each other during their contraction, the tendinous cords would have been let loose, and the margins of the valves carried back into the auricle. But, by the intervention of these muscles, they are pulled upon and shortened in proportion as the sides of the cavity approach each other.

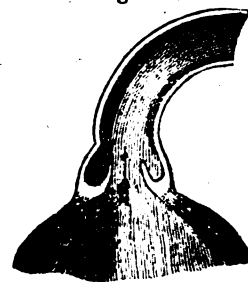
On the whole, then, we perceive that this apparatus, which is as intricate as the rigging of a ship, consists of a variety of fleshy columns and cords, many of which, in fact, run across the cavity of the ventricle.

We are about to exhibit another form of a valve, much simpler, and yet we are bound to believe equally effectual; which tends to support the opinion expressed above, that besides preventing the retrograde motion of the blood, this intricate apparatus of the ventricle is intended more effectually to agitate and to mix the different streams.

At the root or origin of the great artery, called the *Aorta*, there is a firm ring, to which the valves now to be described are attached. The necessity of this will appear evident, since, if the ring could be stretched by the force of the heart's action, the valves or flood-gates would not be sufficient to close the passage; their conjoined diameters would not equal that of the artery which they have to close. These valves are three in number: they are little half-moon shaped bags of thin membrane, which are thrown up by the blood passing out from the ventricle, but by the slightest retrograde movement of the blood, their margins are caught, and then, being distended or bagged, they fall together and close the passage. There are some curious little adjuncts to these valves, which ought to be explained, as shewing the accuracy of the mechanical provision.

When the margin of the valve is thrown up by the blood passing out of the heart, it is not permitted to touch or full flat upon the

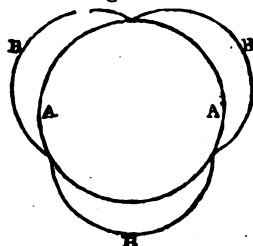
Fig. 5.



side of the artery, for, if it did, it would not

be readily caught up by the blood that flows back; there is, therefore, a little dilatation of the coats of the artery behind each valve, by which, although the margins of the valve be distended to the full circle, they never cling to the coats. These valves, then, are never permitted to fall against the coats of the artery, and therefore they are always prepared to receive the motion of the reflux blood.

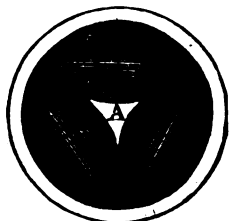
Fig. 6.



Let this figure represent a transverse section of the root of the aorta: A A, the inner circle, is the margin of the three valves thrown up to let the blood pass. B B B are three semi-circular bags, formed by the dilatation of the coats of the artery at this part, receding from the margin of each of the valves—consequently, in such a manner as to leave a space between the valves and the sides of the vessel.

To strengthen the valves, a tendon runs along their margin, like the bolt-rope or foot-rope along the edge of a sail, and these ligaments are attached to the side of the artery, and give the valve great strength.

Fig. 7.



These valves, we have said, are semi-lunar, consequently, when they fall together there must be a space, A, left between them. If we put the points of the thumb, fore and middle fingers, together, there is a triangular space left between them; such a space between the convexities of the three valves would be a defect.

Fig. 8.



This figure represents the artery open, and the semi-circular valves, like little bags, attached to the inside.

Three little bodies like tongues are therefore attached to the middle of the margin of each valve, and these, falling together when the valve is shut down, perfect the septum and prevent a drop of blood passing backwards.

GLASS TILES.—M. Dorlodot, a glass manufacturer, at Anzin, in France, has invented a species of glass tile, of great solidity and transparency, which, it is thought, may be substituted with much advantage in all cases where skylights are now employed. The existing excise

laws of Great Britain oppose, however, an insuperable bar to their adoption in this country, unless under circumstances where expense is no object.—[Mechanics' Magazine.]

MORAL PRINCIPLES THE SAFEGUARD OF LIBERTY.—The following, from the Scottish Guardian, although not correct in all its statements or reasoning, deserves, says the Annals of Education, deep reflection, and we have been gratified to see it circulating extensively through our newspapers.

Two Magistrates of Paris recently made a tour through the United States, and in the course of two years collected important information regarding the statistics of crime and education. In the state of New-York, 500,000 children, out of two millions, are at public schools; that is, a fourth part of the population, and £240,000 are annually expended for this purpose. Yet in this State crime increases, and that, too, though the means of subsistence and employment are so much more easily obtained than in any other countries. In Connecticut, education is still more extended, and nearly a third part of the population is at school. Yet crimes multiply to a frightful extent. The Journal of Education, stating these facts, draws this cautious conclusion: "If knowledge cannot be accused of causing this increase of crime, at least it has not prevented it."

On turning to France, and examining tables of the comparative proportion of instruction in its different departments, during a period of three years, the western and central provinces have been found the most uneducated—15, 14, 13, 12, and 8 per cent. only being able to read and write; but, according to an essay on the moral statistics of France, presented to the Academy of Sciences, the minimum of crime is to be found in these uneducated departments, and the maximum in Corsica and in the south-eastern provinces, and in Alsace, where nearly half the population can read. The different employments of the population may account for the difference in part; yet still we may again draw the cautious conclusion, that if education has not caused, at least it has not been seen to prevent crime.

The only ascertained moral effect of intellectual education was stated in last March by the Lord Chancellor, in the House of Lords. In Russia, where education can scarcely be said to exist, out of 5,800 crimes committed within a certain period, 3,500 were accompanied by violence; while in Pennsylvania, where education is generally diffused, out of 7,400 crimes, only 640 were accompanied by violence, being in the proportion of $\frac{1}{12}$ of the whole number, instead of $\frac{1}{3}$, as in the former case. Thus the only ascertained effect of intellectual education on crime is to substitute fraud for force—the cunning of civilized, for the violence of savage life. Nor would even this small change be permanent. A highly intellectual community, without moral principles and the habits of self-denial which religion imposes, would only prove a sleeping volcano, ready to awaken every moment, and overthrow those very institutions under which it had been fostered. To increase the intellectual power, and enlarge the knowledge, of a man void of principle, is only to create in him new desires, to make him restless and dissatisfied, hating those that are above him, and desirous of reducing all to his own level; and you have but to realize universally such a state of society, to fill the cup of the world's guilt and misery to the brim. What do we say then? Not certainly that education is to be withheld from any member of society,—for that question is now decided, whether we will or not,—but that from the infant school, upwards to the university, it must be a thorough Christian education, in which our youth shall be trained in the ways of virtuous self-control, and piety and righteousness wrought into the understanding and into the whole habit of man. A perfunctory religious

education will no longer serve—not mere Bible reading—but Bible education. The understanding must be enlightened, and the heart must be gained over to the side of truth and righteousness. In short, the grand aim of education must become, not merely the formation of intellectual habits, or the acquisition of secular knowledge, (as is too exclusively the case in present times,) but the formation of the Christian character. Men have hitherto been prone to take for granted, that it was only necessary to teach the art of reading, and before this new power all vice and error would flee away. These are dreams of men ignorant of themselves, and ignorant of our poor nature. Men must be trained to piety and virtue as they are trained to any other habits, whether intellectual or physical; and the moral man must advance contemporaneously with the intellectual man, else we see no increase from our increased education, but an increased capacity for evil doing.

The following application of this truth to our own country and its peculiar dangers, from the Northampton Courier, is another gratifying evidence of the increased interest taken in the subject.

"We believe that there is much truth and justice in the remark, that other influences besides that of force must be exercised, to keep the Union of these states permanently together. Statutes may be enacted, constitutions framed, and interests multiplied, but if there is not a primary feeling of moral obligation and fraternal duty, to cement and enforce them, the duration of this government, like all others, is extremely questionable and uncertain. Pecuniary interest, and common defence, and general prosperity, are but transient ties, which can be thrown off to suit the excited spirit of the times, or changed to meet any pressing emergency. They are but selfish bonds, which yield at the rude touch of popular disaffection, and are easily rent by the misguided voice of public sentiment, and vindictiveness, and clamor. But if legal enactments and obligations, and physical wants, and common defence, do not constitute security against dissolution, what influences can be exerted to sustain and strengthen a civil compact of such stupendous weight and importance as our own? If these things fail, what iron will enter the souls of men, to enforce their moral obligations, and to impress upon them the maxim of 'union,' with certain safety and security?"

We think a moral obligation, and religious feeling, and fraternal affection, which is founded in the heart, and has its emanations from the soul, if rightly cultivated, will insure this purpose, and guarantee its permanent duration. Some deep abiding sentiment, some strong affection of the mind, some radiating influence from the heart, which rises above selfishness, and pecuniary wants, and sordid interest, which all feel and acknowledge, is what should be cherished and cultivated, to bind with adamant chains the different parts and sections of this our own favored country together.

Yes; it is by cultivating the sense of 'moral obligation and religious feeling,' and the 'fraternal affection,' which is their necessary concomitant and result, that our own union is to be maintained, (for we are unwilling to add the qualification which is chilling so many hearts,) and not by constitutions of parchment, or even by the arm of power. If our laws are not supported by our feelings, and principles, the force which we use to maintain them, may indeed make us fellow prisoners, or fellow subjects, but never can unite us as brethren or fellow citizens. France has long sought to establish moral principle on some other basis than that of Christianity; but she has renounced this visionary plan; and now requires the New Testament to be employed as the text book of morals and religion in every school in the empire. Let us profit by her example, and retain the precious legacy of our purer, happier ancestors.

AGRICULTURE, &c.

CULTURE AND EXTRAORDINARY PRODUCTIVENESS OF THE OXALIS CRENATA.—We are indebted to the Quebec Mercury for the following interesting article :

This vegetable has been newly introduced in England, and on the limited experience a brief acquaintance with it has enabled those who have cultivated it to acquire, it is regarded as a plant of considerable promise and well worth attention. It is cultivated by tubers, and we have great pleasure in adding another instance of greater feeling with which the efforts of our new Quebec Society for the Improvement of Agriculture are encouraged by societies, having the same purpose in view, in the mother country, in announcing that some tubers of this plant have been forwarded to its Society, by the Royal Devon and Cornwall Botanical and Horticultural Society, accompanied by the fourth annual report of their Committee, from which we extract the following notice of the *Oxalis Crenata*.

"It is cultivated by tubers, which being furnished with eyes like those of the potato, may, like it, be divided into several cuttings ; but, as the substance of the tuber is the magazine destined by nature to sustain the plant till it acquires sufficient strength to draw its nutriment from the soil, it will perhaps be advisable not to make the division too small, or rather to plant the tubers whole, and reverse the division till after the plants have acquired such a size as to be independent of the nutriment of the parent tuber. While their culture is restricted to the limited operations of the garden, and perhaps also even after they have attracted the attention of the farmer, Mr. Beaton recommends making the tubers germinate in pots protected from the severities of the early spring ; a practice which will facilitate the subsequent division just recommended. They should not be planted out in the open ground till the advancing season has removed all danger of severe frost. When transplanted, they should be put in ground well dug and rendered permeable to their roots, and should not be set closer than from four to six feet apart. They will grow well, as Mr. Beaton observes, in any light soil, but a very rich soil is best for a heavy crop. The best method of planting would perhaps be to set them between drills, the earth of which may from time to time be brought down over them with a hoe. The thick succulent stems which are thrown up in profusion during the summer make excellent tarts, resembling those of rhubarb or gooseberries, but requiring less sugar ; while the leaves are a grateful food to many domestic animals, and the tops and smaller branches may be employed as cuttings to extend its culture, and augment the production of tubers. Cuttings of this kind, stuck in the open ground without any peculiar care, as late as the 26th of last October, were found, when examined on the 16th of the following month, not only to have thrown out radical fibres, but to have commenced the formation of tubers. The plants flower during the greater part of August and beginning of September, and when covered with a profusion of golden blossoms, make a handsome appearance in the flower garden. Cuttings taken at this time, even when loaded with flowers, root freely, and produce their tubers at the usual season. In October the production of tubers commences, and such is

the profusion with which they are thrown out, that, in rich soils, they not only fill the ground to the exclusion of every thing else, but frequently even form on the stems above the surface of the ground. As the production of these tubers does not appear to commence at present earlier than the first of October, and as their growth and production may be affected by cutting the herbage after that day, it would be worth while to determine the question by a careful examination of the produce of two plants growing in circumstances perfectly similar, the herbage of one of which had been cut after this period, while that of the other was left untouched. The herbage when cut during the summer months is rapidly reproduced ; and Mr. Beaton states that on the 27th of last September he obtained no less than ten pounds' weight of green food from a single tuber, planted six feet apart from any other. He considers this herbage as superior in summer to every other kind of green fodder for cattle.

Attempts having been made to discourage the experiments now prosecuting for the purpose of ascertaining the real value of the *Oxalis crenata*, as an article of sustenance for man, as compared with other productions of a similar nature, the secretary of the Horticultural Society feels it his duty, as a friend to every improvement calculated to add to the comforts of the poor, and provide for the wants of our increasing population, without attempting to give any positive opinion, or create hopes which may terminate in disappointment, to lay before the society from time to time such facts as may come to his knowledge from authentic sources, accompanied with such suggestions as those facts may present ; distinguishing, however, the facts from the theory, and leaving his readers to estimate the value of the latter from the details of the former. On the 7th of April, a tuber of the *Oxalis crenata*, weighing only 28 grains, was planted in an old cucumber bed, in a garden on the east side of Plymouth. About five weeks after, two offsets were taken from it and planted separately in the common soil of the garden. The parent plant grew with surprising vigor, and soon spread over an elliptic space, the transverse diameter of which measured three feet seven inches, and the conjugate diameter three feet one inch. Early in November, the proprietor, having accidentally disturbed the ground, broke off a few tubers from one of his plants, which he cooked, and found to be most delicious, resembling the flavor of a mealy potato, without the slightest trace of acidity. On the night of the 25th and the morning of the 26th November, there was a smart frost, which injured the herbage of the plants, and from which they did not again recover. On the 14th of December, he at length took up the roots, when he found the produce to be as follows :

Parent plant, 407 tubers, weighing 7 lbs. 8 oz. 14 dr. 22 gr.					
Two off-sets, 198 " " "	3	8	0	0	
Total, 605	11	0	14	22	

being a return of no less than two hundred and seventy-five thousand per cent., a return almost unparalleled in the annals of horticulture. Of these tubers, one, now in the possession of the secretary, who will be happy to show it to any desirous of examining it, displays the singular form of a compressed cone, or rather triangle, two of whose sides measure one inch and six-eighths, while the remaining

side measures two inches, so that it is as nearly as possible equilateral, with a thickness of nearly six-eighths, and weighs 300 grains, or nearly 14 times the weight (28 grains) of the tuber originally planted ; this one tuber alone being a return of no less than 1392.86, or nearly 1393 per cent. The time occupied from the planting to the digging did not exceed 251 days, or the time usually required for the potato to bring its tubers to perfection, and there is reason to believe that this period might have been advantageously shortened by a month or more, for when the proprietor tried the tubers in the early part of November, they were superior in flavor to the best potatoes, while some of those dug on the 14th of December last, had acquired more or less of an acid taste, which was disrelished by many. It has been already observed that the plants were cut off by the frost of the 26th of November, after which it is probable that the growth of the tubers, as to size, ceased to advance, and nothing consequently was gained by leaving them in the ground—but as the frost was followed by a succession of warm humid weather, favorable to vegetation, it appears probable that, although ceasing to advance in size, the tubers, or many of them, began to germinate ; now the process of germination, as in the familiar instance of malting, is well known to be accompanied with the formation of sugar, from the absorption of oxygen, both from the decomposed humidity and from the surrounding atmosphere, by the farinaceous portion of seed. In plants, however, whose product, in place of being saccharine, is a peculiar acid, as in the family of the sorrels, it is not improbable that the combination of the oxygen during the progress of germination, with the farinaceous portion either of the seeds or roots, forms that peculiar acid which, from the genus by which it is furnished in the greatest abundance, has been termed the oxalic acid ; and hence, those tubers which, prior to the 26th of November last, were perfectly sweet, became subsequently, from the commencement of germination or malting, more or less acid according to the degree of progress made. This hint, founded perhaps upon an erroneous analogy, is merely thrown out for the purpose of calling attention to the subject, eliciting information from those more competent to supply it, and removing any unreasonable prejudice which may have been created in the minds of those who have tasted the tubers at an improper stage of their growth. As for those whose fears may have been alarmed by the information that oxalic acid exists in the *oxalis crenata*, it is but just to relieve their apprehensions by stating that the acid does not exist in its deleterious state, but in the form of a neutral salt, the super oxalate of potassa, whose effects, in the common wood sorrel of the hedges (*Oxalis acetosella*), the sorrel dock (*Rumex acetosella*), and other similar vegetables freely used as sallads, are eminently antiscorbutic and beneficial to the health.

It is stated that the tubers of those plants of the *oxalis crenata*, which have blossomed, are larger and better than those of plants which have not flowered : the fact, if correct, is important, and deserves inquiry, especially as the reverse is said to happen in the case of the potato (*Solanum tuberosum*.)"

ON THE PRESERVATION OF POTATOES.—Potatoes at the depth of one foot from the

ground, produce shoots near the end of spring; at the depth of two feet, they appear in the middle of summer; at three feet of depth, they are very short, and never come to the surface; and between three and five feet, they cease to vegetate. In consequence of observing these effects, several parcels of potatoes were buried in a garden at the depth of three feet and a half, and were not removed till after intervals of one and two years. They were then found without any appearance of germination, and possessing their original firmness, freshness, goodness, and taste.—[Ann. Soc. d'Agric.]

CHURNING BUTTER.—Not many days since, on entering the house as usual about dinner time, I found my family very much perplexed about the cream which they had been churning for about two hours, and yet no signs of butter. On examination I found the cream was worked into a perfect froth. I was satisfied that unless something could be done to change its nature or condition, churning would be useless: I therefore threw into the churn as much common salt as I could hold in my right hand; I then put the churn in motion, and in 15 minutes, by the clock, the butter had perfectly separated from the milk.—[Ohio Farmer.]

SILK.—The Connecticut Silk Manufacturing Company are to receive \$11,500, to aid and encourage them in establishing a silk factory; Messrs. Gay and Botton, mechanics of Lisbon, \$2,000, as a remuneration for their labor and expense in inventing and constructing silk machinery; the Mansfield silk factory, \$1,500; the State House yard, \$8,000, and the remaining \$2,000 goes into the State Treasury.—[Hartford Review.]

MANURE FROM HOGS.—This is the season for farmers to avail themselves of every opportunity to collect every substance that can be made into manure. Let every farmer look about him and endeavor to find sources of increasing his manure. The following is from the Northern Farmer:

One of the regular means which every farmer possesses, for the increasing of his stock of manure, and which is by no means the least valuable, is by many totally neglected. It is that of making their hogs serviceable in this business. Upon this point, I can speak from past experience, both in respect to the loss from neglect and the advantages derived from these valuable animals, when employed for this purpose. It was my practice, till within the last fifteen years, to permit my swine to roam at large in the highway, in the summer season; or what was but little better, confine them in a pasture, for three or four months during the warmest of the season; carrying whatever I might have to give them as feed, to the place in which they were confined. I began, however, after a while, to consider this course of turning hogs to pasture, or permitting them to run in the highway, to be altogether wrong. Upon mature reflection, I concluded that by confining them in a close yard, and furnishing them with the materials for making manure, the profits would be amply sufficient, not only to repay me for all the trouble of furnishing the materials, but would also enable me to give them better keeping; and, in this respect, my anticipations have been fully realized. One er-

ror, however, I committed in the outset, and I have noticed the same fault in others. It was this: my yard was at first made at least three times too large, embracing about two and a half rods of ground, for three or four hogs, the number which I generally keep; and I have seen yards including a much larger space made by some farmers, for an equal number of hogs. Now this, where the object is the making and saving manure, is, in my judgment, wrong; for, in so large a space, the quantity of materials put into the yard must be very great, or it must lie very thin over the yard; in either case, the benefit received from three or four hogs is but small. At least I found it so, where the materials, of whatever nature they might be, were put in one season and carried out the spring following. I therefore diminished my yard to twenty feet by fourteen, about one-third of its original dimensions; and I find this space to be sufficiently large for four hogs; and, I believe, large enough for even six to make manure to advantage; for in this space, materials sufficient for twenty or twenty-five loads of manure may be deposited in the course of one season; and what to me seems of the first importance in this business, is the hogs are kept continually on the materials except when in their house, for the purpose of eating and sleeping.

My method of supplying these materials is the following: after having cleared their yard at the season of planting, I put into it such portions of straw as I may have left on hand after the season of foddering is past; and if I have not a sufficient quantity of this, to furnish the necessary supply till vegetable substances attain to a sufficient growth to be profitably collected, I put in earth collected from the low places, by the side of the high-way; though this I more generally place in or near my barnyard, in a situation to receive and retain the wash that might otherwise escape from that. Brakes and weeds of any kind are valuable. These I make use of to the extent they are obtainable, when in a green state; as I consider green vegetable substances, for this purpose, far more valuable than dry. Potato tops when pulled for early use, before they become dry and shrivelled, I consider equal if not superior to any other green substances for this purpose. Pea-vines I usually put into my hog yard, after the peas are threshed off; and if some are put in before being threshed, they are as gratefully received by the inmates of the yard. Buck-wheat straw I have made use of, but I deem this to be of all substances the least valuable for the purpose of making manure, when it has ripened into a dry state, however valuable it may be when ploughed under in a green state, as it unquestionably is; being at that stage of its growth one of the most juicy plants of the vegetable kingdom.

I add nothing by way of materials to my hog yard, after the first of September, at which time I generally commence feeding, for the purpose of fattening; and by the middle or twentieth of December, my usual time for killing my hogs, I make from four to five loads of manure to each hog so kept, superior to the summer dung, obtained by yarding my cows. And the quantity made by my hogs is for each one double to that made by each cow for the same period of time.

Thus I have endeavored to present to the readers of the Farmer my method of adding to my stock of manure by the aid of my

hogs from fifteen to twenty loads annually: whereas, I used formerly, as too many do at the present day, who call themselves farmers, entirely to neglect all these advantages, the improvement of which is so essential to profitable farming. It is to be hoped, however, that no farmer, who has the opportunity of reading an agricultural paper, is so remiss, in relation to that which is so conducive to his best interests. MATTHEW BUELL, JR.

Newport, May 31st, 1834.

HOING CORN.—After such an unfavorable spring as we have had this year, the hoeing of early planted corn is rather a disagreeable employment than otherwise.

When the soil is of a clay loam, and was early ploughed and planted, after which were heavy rains, and the soil has become hard, and the corn looks pale and sickly, it is often abandoned as not of sufficient promise to compensate for the labor of cultivation; but young farmers should remember, that after they have done their duty by carefully ploughing and hoeing, much depends upon the weather, during the months of July and August, for producing a good crop of corn, and although the plants may continue stunted during much of the month of June, yet if the ground is kept in good condition, a fine crop may be realized.

Many are apt to say, in case of dry weather, during the month of June, "that the ground is so dry that it will do corn more hurt than good to hoe it." Never mind, if the ground is dry, stir it the more, it is the best way to guard against drought; in short, do not neglect hoeing, for stirring the ground without manuring is better than manuring without stirring.—[Goodsell's Genesee Farmer.]

EFFECTUAL SECURITY AGAINST THE BEE MOTH.—As soon as your bees commence working in the spring, examine your hives, and with a slab of wood, or piece of hoop iron, scrape the stand immediately under the hive, also around the inner edges of the box, taking care to remove all the web that may be attached to any part of the stand or hive, as the whole secret consists in keeping them free from the web formed by the moth or fly. Having completed this operation, provide yourself with four square blocks of wood, and place one under each corner of your hive, so as to raise it not quite half an inch from the stand; this will enable you to clean the stand without removing the hive. This scraping operation must be repeated every three or four days, if there should be any appearance of web forming on the stand, or around the inner edges of the hive. It seems necessary to remark that the moth or fly makes its attacks by a kind of regular approach, first forming its web on the stand, and then extending it up the sides of the hive until it gets complete possession. By a little attention in cleaning the stand and hive, as directed, you will certainly secure your bees from the ravages of the worm. In the winter, the blocks must be removed from under the hive, so as to allow it to rest immediately on the stand, which will secure it against the attacks of mice, &c. On this plan, it is advisable to make an entrance for the bees by cutting a perpendicular slit, in the front of the hive, half way from the bottom, say two and a half inches in length, and one-eighth of an inch wide, with a kind of a shelf just under it, to serve as a resting place for the bees going and returning to the hive. After being a little used to it, the bees seem to prefer this entrance to the one at the bottom of the hive. This plan has proved an effectual security against the worm, after every other remedy has failed; and not a single hive has been lost since it was adopted. Z.

MANGOLD WURTZEL, OR FIELD BEET.—We are happy to find that farmers are awake to the cultivation of this crop, and so great has been the increase of demand for seed, that it has

THE COILING SYSTEM OF CULTIVATING GRAPE VINES IN POTS.—At page 164, we inserted an article on this interesting system. We subjoin some additional facts from the Gardener's Magazine.

This coiling system is certainly a completely new feature, and, I think, a very valuable one, in the art of grape-growing. Is it not a matter of great importance that, in consequence of my discovery, a gardener, who may go to a situation, in the autumn, where no grapes have previously been growing, may be enabled to produce there easily, for the ensuing season, from 500 to 1000 bunches of fine grapes? All that is wanting to enable any gardener, so circumstanced, to do this, are the prunings of the vines from any garden, that would otherwise be thrown away, and, of course, a convenient frame, pit, or house, for growing them in. If abundance of shoots can be produced, and there is a sufficient extent of frames, &c., either temporary or permanent, two, three, or five thousand bunches may thus be produced in a garden where grapes were never seen before.

The coiling system is nothing more than taking a long shoot or cutting from a vine, cutting out all the buds except a few at the upper end, and then beginning at the lower end, and coiling the shoot round and round, say from three to six or eight times, the inside of a pot of 12 or 14 inches or more in diameter. The shoot may be of any length, from 6 feet to 30 feet, and it may be entirely of last year's wood; or the greater part of it may be of old wood, provided 3 or 4 feet at the upper end be of new wood; because, as every gardener knows, the buds from young wood are more certain than those from old wood of producing blossoms the first year. The vine being coiled round in the pot, and plenty of drainage being put in the bottom, take care that the end of the shoot left out of the pot, on which the fruit is to grow, be not injured at the point where it separates from the coil. This shoot may be 2 or 3 feet long; and to keep it steady, it may be tied to a stake, or coiled round two or three stakes. After this, fill up the pot with a rich loamy soil, pressing it firmly against the coil, as if you were making firm the end of a cutting. Unless this is done in such a manner as to bring every part of the coil in close contact with the soil, it will not root so readily as it otherwise would do. The next operation is, to wrap up all that part of the stem which is above the pot with moss, and this moss must be kept constantly moist till the grapes are formed. The pot should now be plunged in bottom heat, either in a pit or forcing-house; but, wherever it is plunged, care must be taken to regulate the temperature of the atmosphere of the house, in such a manner as to prevent the top of the vine from being excited before the roots. If this should happen, the young shoots produced will soon wither for want of nourishment. Abundance of air, therefore, should be given for several weeks, so as never to allow the temperature of the atmosphere of the house, frame, or pit, to exceed 45 or 50 degrees, while the temperature of the medium in which the pots are plunged may be as high as 65 or 70 degrees. When, by examination, you find that fibres are protruded from the coil, the temperature of the atmosphere may then be gradually raised when the buds will break, and the shoots will grow apace.

The shoots proceeding from that part of the stem above the pot should be led up to within 8 or 10 inches of the glass, and there trained, at that distance from it, towards the back of the pit or house. It is needless to state to the practical gardener, that each shoot will require to be shortened, free from laterals, &c. Each vine will produce from three to twenty or more bunches, according to the length of coil and variety of grape. I have now (Jan. 17, 1834,) upwards of 200 coiled branches in pots, and nearly fifty of them in action; some with twenty bunches of fine grapes upon them.

I was asked the other day, whether vines so

treated would not require frequent shiftings into larger pots; or, at least, to be shifted once a year. To this I answered, that while we had a plentiful supply of prunings from our own vines, or could procure them from those of our friends, the best mode would be to treat the plants, after they had borne one crop, as we do the roots of asparagus, and other plants that we force: that is, to throw them away. If, however, you should wish to keep the coiled plants a second year, and the pots should be found to be too full of roots, turn out the ball, shake the soil from the coil, and cut away all the roots close to the shoot; then repot it as before. If this be done in winter, the plant will produce an excellent crop the following season; probably a better one than if the roots were allowed to remain, and the ball shifted into a larger pot or box. The pot or box is in either case soon filled with young vigorous fibres, like a hatch of young maggots, each eager for food, and consequently sending it up in abundance to supply the crop above. Can there be a doubt but that this is a far superior mode to keeping pots, or even fruit tree borders, filled up with old inert roots?

Before my bunches are clearly developed, I have thousands of eager mouths or spongioles, extending along the coiled shoot, and each gaping for food; some of these rootlets are 3 feet long, and before the vines are out of blossom, many of them are 6 feet in length, and matted round and round the pot. You will easily understand from this how important it is to supply vines so treated with liquid manure, either by watering from above, or by a supply from a saucer or feeder from below.

I am, Sir, yours, &c.

JOHN MEARNS.

Wilbeck Gardens, Jan. 17, 1834.

ART OF MANAGING SHEEP.—Sir: I have been very desirous of ascertaining the particular method in which Mr. Barney, of Philadelphia, manages his sheep, that enables him so far to exceed every body else in producing fine mutton, and good wool.

On his late visit to this city, I put the question to him, wherein consisted his superior management of sheep? He gave the following reply: He said a gentleman visited him not long since, and on going to his sheep-yard, and viewing it, asked him the same question. He showed at that time, from fifty ewes, upwards of sixty lambs, all lively and brisk, with a loss, I think he said, of three or four. The gentleman observed to him that he had his shed covered with dead lambs; and asked wherein the secret in breeding lay. Mr. Barney observed to him, you stuff your sheep with dry food. Yes, as much good clover hay as they will eat, was the reply. Mr. B.—You give them no water, but suffer them to go out in time of snow and eat it as they are disposed to do? Yes. Then, said Mr. Barney, there lies the secret. Your sheep fill themselves with dry hay; they get no water; and they have not a sufficient supply of gastric juice to promote the digestion of the hay in the stomach; they cannot raise it to *chew the cud*; they lose their appetite; are thrown into a fever; and cannot bring forth their young, or they bring forth a feeble, starved lamb, that falls off and dies the first exposure to the cold or rain. On the contrary, I take care to provide my sheep with good clear water in summer and winter. I feed them regularly with hay through the winter, and give them ruta бага and mangel wurtzel every day. The ewes produce me 120 per cent. increase in lambs. You cannot, says Mr. Barney, get along without ruta бага and mangel wurtzel.

This gentleman has just sold his sheep for upwards of \$17 per head to the butchers. It is his opinion that sheep are the most profitable stock that a man can raise; and it appears he makes use of no expensive food, or increased quantity of it. But the secret of raising good stock of every kind consists in maintaining that regular and cleanly mode of proceedings, which preserves the digestive organs of the ani-

mal in a healthy state, and enables them to convert what they eat into chyle, suitable for the nourishment of the animal. Respectfully yours, A.—[Farmer and Gardener.]

DISEASE IN THE FEET OF SHEEP.—As the persons employed on the farm of Anthony Anderson, Esq., at Dorchester Bridge, were shearing his sheep, on Thursday, the shepherd called his attention to a small orifice bust, at the separation of the foot of one of these animals, and told him that it was a disease called the *worm in the foot*, which Anderson, though an experienced farmer, informs us he had never seen, or indeed heard of. The shepherd advised that the wound should be pared down so as to get at the head, and with a strong needle he passed some doubles of thread through it, and extracted what he called the worm. It appears to be a *Hydatid*, or bladder-like skin, containing a fluid not unlike starch, and a small portion of a hairy substance, resembling the short wool on the legs of sheep. Mr. A. extracted one such worm, from each foot, all similarly placed at the articulation of hoofs; and found five or six of his sheep afflicted in like manner. After extracting the cause of the disease, whatever name be applied to it, he filled the cavity with pepper and salt.—[Quebec paper.]

APPLES FOR LIVE STOCK.—A farmer in Blandford says cows fed with apples in the autumn will give milk as abundantly as in June, and that he cannot perceive any difference in the beneficial effects of sour and sweet apples. Another, in East Granville, says he can make as good pork and beef with apples as potatoes. It is the opinion of many that a bushel of the former nearly equals in value a bushel of the latter. Such facts we think are of great value to the farmer: if he can convert his apples into beef and pork, or by them increase the products of the dairy, then a way is opened for the conversion of fruits into money without going through with the longer and more tedious process of converting them into cider, and that into brandy, and that into money. Again, if pork, beef, butter and cheese, can be made from apples, they will yield a greater profit to the farmer than if he make these articles by the aid of potatoes or grain, since they cost but little.—[Westfield Journal.]

MIXTURE FOR CATTLE AND SHEEP.—It has been recommended, by a gentleman who tried it, to mix salt with unleached wood ashes, in the proportion of one quart of fine salt to one half-bushel of ashes, and place the mixture under cover, where the animals can have access to it. This composition, our informant said, preserves the health of the animals, increases their appetite, and he believed would preserve sheep against the rot, and horses against botts.

[From Sir Samuel Moreland's Perpetual Almanac, Ready Reckoner, and Gardener, published in the reign of Queen Anne.]

Directions relating to the Purchasing of Land.

First see the land which thou intend'st to buy,
Within the Seller's Title clear to lie;
And that no Woman to it doth lay claim
By Dowry, Jointure, or some other Name,
That may it cumber. Know if bound or free
The Tenure stand, and, that from each Feoffee
It be released; that the Seller be so old,
That he may lawful sell, thou lawful hold:
Have special care that it not Mortgaged be,
Nor be entailed on Posterity.
Then if it Stand in Statute bound or no,
Be well advised what Quit rent out must go,
What Custom service hath been done of old,
By those who formerly the same did hold;
And if a wedded woman put to Sale,
Deal not with her, unless she bring her Male;
Thy bargain being made, and all this done,
Have special care to make thy Charter run
To thee, thy Heirs, Executors, Assigns,
For that beyond thy life securely binds:
These things foreknown and done, you may prevent
Those things Rash Buyers many times repent,
And yet when you have done all that you can,
If you'll be sure, deal with an honest man.

NEW-YORK AMERICAN.

JUNE 28—JULY 3, 1834.

LITERARY NOTICES.

MIRIAM COFFIN, OR THE WHALE FISHERMEN; 2 vols. New York: G. & C. & H. Carvill.—An original American novel is not so common a publication but that we always take one up with more interest than is created by the reprint of some new fiction from the British book market; and *Miriam Coffin* is a work which, in more respects than one, will repay perusal. It wants many of the requisites of a finished novel, but it contains some most admirable scenes, and abounds in graphic descriptions of manners;—the manners of a race which, though immortalized in the magnificent periods of Burke fifty years since, are still but little known to their own countrymen. We congratulate the Nantucket whalemens upon having at last found an annalist to record their daring adventures with a pen that seems guided by the soul of a sailor.

The scene of the story, to be in keeping with the roving characters that move upon it, shifts to every part of the world; and though we have hesitated a little in making our selection between the picturesque islands of the Pacific, and the not unromantic peculiarities of Nantucket itself, we believe that none of our readers who enter into the spirit of the following bold scene upon the coast of Africa, will complain of the preference we have given it over all others in the book.

Not Ocean's monarch shall escape us free!

Masanillo.

Soon the sport of death the crews repair:
Redmond, unerring, o'er his head suspends
The barbed steel, and every turn attends;
Uuerring aimed, the missile weapon flew,
And, plunging, strike the fated victim through.
While his heart the fatal javelin thrills,
And flitting life escapes in sanguine rills!

Falconer.

Among the indentations of the coast of Western Africa, the bay of Walwich may be traced upon the chart. This bay was much resorted to, in years past, for the right-whale—or the species that live by what whalers call "*suction*." The bay contains good anchorage ground, and shelter for ships; and, at some periods of the year, known to whale-fishermen as the season for feeding, the coast along its margin is visited by these huge animals in pursuit of food, which consists principally of "peculiar kinds of small fish, that keep in shoal water about the bay and herd or school together in countless numbers. Thousands of the mullet, the roman, the stone-bream, the harder, the mackerel, and many other varieties that abound in African bays, together with myriads of the Medusan race, are sucked in by the right-whale for a breakfast, through the vertical bars of whalebone that stud its mouth, like the gratings of a prison window, or the palings of a picket fence.

There are but few persons who do not know the difference in the formation and habits of the two principal species of the *cetaceous* tribe—the *mysticetus* and the *cachalot*—which are the object of pursuit of the whale-fisherman. They are called the *right-whale* and the *spermacetti*. The former has immense jaws of bone, without any well-defined teeth, but with a groove of dark fibrous material within its huge mouth, called whalebone, through which to strain its food;—keeping mostly in shallow water, and living upon small-fry; disappearing from the surface at short intervals; remaining under water but for a few minutes; breathing, or ejecting from its blow-holes, columns of water, in two perpendicular streams, or *jets d'eau*, on rising to the surface, and producing inferior oil. The latter, to wit, the spermacetti, has tusks of ivory on a huge dropping under-jaw; blunt, clumsy head, and broad tail; frequenting none other than the deepest water; diving deep and perpendicularly; staying long out of sight, and, on rising, blowing or spouting in a single jet, or stream, which inclines to the horizon; and producing a better quality of oil, though in smaller quantity according to its bulk, than the right-whale. The spermacetti yields, in addition to its oil, a valuable matter called *sperm*, which is highly prized as an article of commerce; and also produces that rare aromatic drug, called *ambergris*.

Jethro, with his son Isaac, remained in London, intending, when his business should be finished there, to take passage home in some merchantman bound for the colonies.

The *Grampus* set sail from the Thames. The place of her rendezvous with the *Leviathan* had been appointed at Walwich bay. The *Grampus*, without any remarkable incident, arrived first upon the spot; and had waited for her consort for several days.—Some forty whaling vessels, of all nations, were riding at anchor within the bay, waiting the expected visits from the whales. Day after day—week after week—had glided away, since the arrival of the major part of the fleet, but not a solitary animal had as yet made his appearance. The *Grampus* was fitted out for the sperm-whale fishery, and had taken in her three years' provisions at London. Her captain and crew, who had been some time idle, now longed for sport; and they cared very little,—since wait they must for the good ship *Leviathan*, in order to double The Horn in company,—whether the invitation to amusement should soon come in the shape of a right-whale, a spermacetti, or a razorback;—the last the most dangerous and least productive of all.

Africa has a burning, sultry coast. The sun was sending a lurid glare upon the sea, which heaved long and sluggishly in the bay, without a breath of air to curl the crest of the swell. The crews of the assembled ships were at their early breakfast, and the officers and men on the lookout were lazily gazing upon the mirrored surface of the water, or listlessly walking to and fro upon their posts. In many of the whale-ships,—particularly in those that had previously been in Northern latitudes,—a crow's nest, or a sort of sentry-box, surrounded, breast high, by canvass stretched as a protection against the weather, and covered with an awning,—was perched on the maintopmast, or at the topgallantmast head. In these places of look-out a man is always stationed to observe the approach of the whale, and to communicate his motions to those on deck. But in the *Grampus*,—destined as she was for temperate latitudes in the Pacific,—no other accommodation was provided for the sentry, than the bare maintopgallant cross-trees, where for hours together the lynx-eyed watcher sent forth his anxious regards upon the ocean, and deemed his station a post of honor,—as it always proved of extra profit, if he should be the first to discover a whale within pursuing distance.

"Dull work!" said Seth, slowly pacing the deck;—"work," by my hopes!—in this accursed climate, where scorching air blows from the great African desert:—and as for amusement,—we may feast our eyes, if we like, by looking upon armies of naked Hottentots, 'capering ashore,' smeared with slush, and surfeiting upon tainted blubber!—who mock us in our commands, as we coast along the bay,—repeating, as they follow us, our very words like an echo—and mimicking our minutest actions, when we attempt to make ourselves understood by signs. Poor brutes!—The Creator has smitten their continent and their minds alike, with barrenness; and has given to the one its arid plains, which defy the hand of cultivation,—while the souls of the people are unblest with the refreshing dews of intelligence. But what boots it?—they are happier, in their ignorance, than we who boast of knowledge, but who are restless in our desires.

—As the Ocean—

In one unceasing change of ebb and flow."

The reflections of Seth, upon the blessings of ignorance, were interrupted by a thrilling cry from the mast-head.

"*Flocks—flocks!*" was the welcome salutation from aloft. The half-eaten meal was broken off,—and the rush to the boats was tumultuous. It was like that of an army of practised gladiators, in the arena of the Coliseum. The alarm was heard by the crews of other vessels; and the intelligence spread like wildfire that a whale was entering the bay.—Four boats were lowered—manned—and put off from the *Grampus*, in less than half a minute after the cry was uttered aloft. A hundred other boats were instantly in motion, and bearing down upon the animal. Some, however, took the precaution to separate from the rest, and this divided the chances of capture. None could count with certainty upon striking the prey, for his course was irregular while in pursuit of his food. The whale is not a vicious animal, unless wounded; and, if not frightened, will move off sluggishly from his pursuers, and appear and disappear at regular intervals:—so that, if the direction is well observed when he sinks, (or shows his *flocks*, or forked tail, as he dives,) a pretty accurate calculation may be made as to the place of his reappearance.

The whalers in the boats that had scattered, had their share of excitement in turn; while those who had headed the whale, when he sunk from their sight for the first time, saw with mortification, by the indication of his *flocks*, that he had already deviated largely from his first course. As a score of

others were already near the spot where he would next rise to blow, the first pursuers naturally lay upon their ears;—but they were watchful of the event of the chase.

Macy, with his two mates, and an approved boat-steerer, had each command of a separate boat. The selection of the crews for these boats, is in fact a matter of taste or favoritism with these officers of the ship. The captain has the first pick of the whole crew;—and, if his judgment is good, he chooses those of the most powerful limb and muscle, quickness of apprehension, and readiness of execution. The next choice falls to the first mate;—the second officer's turn comes next;—and the siftings of the crew fall to the boat-steerers. It may readily be believed that Macy, who was an experienced whaler, was altogether discreet in his choice, and had a crew of oarsmen who might be pitted against any other crew of the whole fleet. To say that they were Americans, and experienced whale-fishermen, is sufficient assurance, of itself, that they were competitors for all whaling honors, against the whole world. It is still, as it was eminently then, altogether un-American to admit of superiority in this business. It was, therefore, with deep chagrin that Macy saw the game escape him; for thus far he had led the van of the attack; while the whalers in some fifty boats in the rear, if not altogether content that he should be their leader, were at least satisfied, that to be beaten by him was no dishonor.

The Englishman, the Dane, the Dutchman, the Swede, as also representatives, of other European nations, were Macy's ambitious competitors, for the honor of killing the first whale of the season—the long and the strong pull was exerted to carry off the prize, and fair words of encouragement were offered, and enforced in the blandest and most persuasive manner, by those who controlled the boats. Some, uselessly enough, where so many were engaged, pulled after the animal in his devious course after food; while others rested on their oars to watch the result, and to take advantage of his wanderings. The scene was most animating—and but a few minutes served to scatter the boats in every direction; to sprinkle the bay with dark moving spots; to people it with life—sinewy life; in short, it was an exhibition of the noblest of God's creation, both animal and human, waging a war of extermination, and threatening death and destruction by collision.

The noble animal—for it was a right-whale of the largest class—held on its course up the bay, scooping its food from time to time, and annihilating its thousands of small fish at a dive; leaving the boats far in the rear, and darting off in new directions, until those who were most on the alert, or rather those who pulled the most constantly, were fain to give up the chase and lie on their oars. The whale approached the anchorage ground of the ships; and its speed was increased as it shoaled the water, in proportion to its eagerness after its flying victims. The small fish, driven before their huge devourer, clubbed together, and concentrated in schools of such magnitude, that the ships were surrounded, as it were, with a dense mass of animal matter, huddling together for common safety, or flying in swarms, before their common enemy, like the multitudinous and periodical flowings of the herring from the Greenland seas.

Intent upon his prey, the whale appeared unconscious of the dangerous vicinage of the ships, and played among them with a temerity that evinced a tameness, or perhaps an ignorance of its danger, that plainly showed he had never been chased by the whaler, nor hurt by the harpoon. His eager pursuit after food may, however, account for his recklessness; for, generally speaking, the instinct of the whale is sufficient, upon all occasions, to avoid an unusual object floating upon the water; and at such times the nicest stratagem of the art of the whaler is required to capture him.

The persecuted tribes have been chased so often—pursued so relentlessly, from haunt to haunt, that they must not be unnecessarily scared; for, if they are, the pursuit may as well be abandoned first as last. No crew can row a boat, for any length of time, to keep pace with a frightened and fugitive whale.

The animal, gorged with its fishy meal, at last commenced its retreat from the bay; and the boats manœuvred to head him off as he retired. Obeying the instinct of his nature, he now showed his *flocks* and vanished from the sight, before the boats could get within striking distance. A calculation being made where he would next appear, (for beneath the water the whale does not deviate from a direct line in his horizontal progress,) a general race ensued; and each strove, as if life were on the issue, to arrive first upon the spot. Some twenty minutes' steady and vi-

gorous pulling found the foremost boats a full mile behind the whale, when he arose again to breathe.—Several boats were unluckily ahead of Seth in the chase, as their position at starting enabled them to take the lead, when the animal began to push for deeper water. But Seth's men had been resting on their oars, while nearly all others had exhausted their strength, in following the whale among the ships; and the captain judged rightly, that in darting after his toney prey, he would lead them all a bootless dance. He had determined to wait for the retreat, and then to hang upon the rear of the enemy. There were others, however, acquainted with the soundings of the bay, whose tactics were scarce inferior to Seth's; and the advantage gained over him by several boats was proof of this, or at least of the superior accuracy of their calculations. It was a long time since Seth had given chase to an animal of the right-whale breed;—he had grappled, of late, only with the spermacetti.—and, therefore, it was not to be wondered at, at this time, and under the circumstances, that some of those around him should beat him in manœuvring in the bay. But, in the steady chase, he knew that he could count upon the speed and bottom of his boat's crew, and he was now resolved to contest for the victory.

"We have a clear field now, my boys—give way steadily—we gain upon them—give the long pull—the strong pull—and the pull together—keep her to it—heave ahead, my hearties!" Such were the words of Seth, as with eyes steadily fixed upon a certain point, and with his steering oar slightly dipping at times, he guided the light whale boat unerringly towards the place where he expected the whale to re-appear. One by one he had dropped his antagonists by the way, until three only remained manfully struggling between him and the prize. The whale again breathed at the surface, and the distance between the headmost boat and the animal was found to be diminished to half a mile—while the ships in the bay were run "hull down." The pursuers were now out upon the broad ocean. Those who had abandoned the chase in despair, were slowly returning to their ships. The rigging of the vessels were manned by anxious spectators, watching the motions of the tiny specks out at sea, with beating hearts. The whale again cast his flooks into the air, and sank from the view of his pursuers. Now came the tug of war.

"You must beat those foreigners ahead," said Seth, to his men, "or crack your oars: they are of good American ash, and will bear pulling," continued he:—"Give way with a will!—Pull—pull, my lads;—that whale will not sink again without a harpoon in his body:—and 'twill never do to tell of at home, that we allowed men of other nations to beat us. Keep your eyes steadily on your oars;—mark the stroke of the after oar, men—and give way for the credit of the Grampus!"

Here Seth braced himself in the stern-sheets—seized the steering oar with his left hand, and placed his right foot against the after oar, just below the hand of the oarsman.

"Now pull for your lives!" said he, "while I add the strength of my leg to the oar!—Once more!—Again, my boys!—Once more—There,—we pass the Spaniard!"

"Diabolo!" exclaimed the mortified native of Spain.

The additional momentum of Seth's foot, applied to the stroke oar, had done the job; but two more boats were to be passed,—and quickly too,—or all the labor would be lost.

"At it again, my boys!—steady—my God, give way!—give way for the honor of the Grampus. One pull for old Nantucket!—and—there—we have shown a clean pair of heels to the Dutchman!"

"Hagel!—Donder and blizem!" said the Hollander.

"There is but one boat ahead," said Seth;—"It is the Englishman!—We must beat him too, or we have gained nothing! Away with her, down upon him like men!—One pull for the Grampus, my boys!—another for old Nantuck!"

The American now shot up alongside of the English boat;—but the honor of the nation, too, was at stake; and they bent to their oars with fresh vigor. Five athletic Englishmen, each with a bare chest that would have served for the model of a Hercules, with arms of brawn and sinew, swayed their oars with a precision and an earnestness, that, for a minute, left the copest doubtful. The English commander, seeing how effectually Seth managed the stroke oar with his foot, braced himself in a similar attitude of exertion;—and his boat evidently gained upon the Nantucketer! Seth saw the increase of speed of his rival with dismay. The

whale, too, was just rising ahead. The bubbles of his blowing, and of his efforts at rising, were beginning to ascend! It was a moment of intense anxiety. The rushing train, or vortex of water, told that he was near the surface. Both commanders encouraged their men anew by a single word; and then, as if by mutual consent, all was silent, except the long, measured, and vigorous stroke of the oars.

"For old England, my lads!" shouted the one.

"Remember old Nantucket, my boys!" was the war-cry of the other.

Both plied their oars with apparently equal skill; but the hot Englishman lost his temper as the boat of Seth shot up again, head and head with him—and he surged his foot so heavily upon the after oar, that it broke off short in the rowlock! The blade of the broken oar became entangled with the others on the same side, while the after oarsman lost his balance, and fell backward upon his leader.

"I bid thee good bye!" said Seth, as he shot ahead.

"Hell and damnation!" vociferated the Englishman.

"Way enough—peak your oars!" said Seth to his men. The oars bristled apeak, after the fashion of the whale-fishermen. The harpooner immediately seized and balanced his weapon over his head, and planted himself firmly in the bow of the boat. At that instant the huge body of the whale rose above the surface; and Seth, with a single turn of his steering oar, brought the bow dead upon the monster, a few feet back of the fin. Simultaneously with the striking of the boat, the well-poised harpoon was launched deep into the flesh of the animal.

"Starn all!" shouted Seth.

The boat was backed off in an instant; and the whale, feeling the sting of the barb, darted off like the wind! The well-coiled line flew through the groove of the bow-post with incomparable swiftness, and it presently began to smoke and then to blaze with the rapidity of the friction. Seth now took the bow with his lance, exchanging places with the harpooner, and quietly poured water upon the smoking groove, until it was cooled. The oars were again peaked, and the handles inserted in brackets fixed on the ceiling of the boat beneath the thwarts—the blades projecting over the water like wings; and the men, immovable, rested from their long, but successful pull:—and much need did they have of the relief, for a more arduous, or a better contested chase, they had never experienced.

The line in the tub was now well nigh run out; and the boat-steerer, with a thick buckskin mitten, or nipper, as it is called, for the protection of his hand, seized hold of the line, and, in a twinkling, caught a turn around the loggerhead, to enable the man at the tub oar to bend on another line.

The rapidity of the animal's flight the while was inconceivable. The boat now ploughed deeply and laboriously, leaving banks of water on each side, as she parted the wave, that overtopped the men's heads, and effectually obscured the sight of every object on the surface. The swell of the closing water came after them in a heavy and angry rush. The second line was now allowed to run slowly from the loggerhead; and a drag, or plank about eighteen inches square, with a line proceeding from each corner, and meeting at a point like a pyramid, was fastened to it, and thrown over to deaden the speed of the whale. Another and another drag were added, until the animal, feeling the strong backward pull, began to relax his efforts:—and presently he suddenly descended, though not to the full extent of the slackened line.

It now became necessary to haul in the slack of the line, and to coil it away in the tub carefully; while the men pulled with their oars, to come up with the whale when he should rise to the surface. All things were soon ready again for the deadly attack.

The ripple of the whale, as he ascended, was carefully marked; and when he again saw the light of day, a deep wound, close to the barbed harpoon, was instantly inflicted by the hand of Seth. It was the death blow.

"Starn all!" was the cry once more—and the boat was again quickly backed off by the oarsmen.

The infuriated animal roared in agony, and lashed the ocean into foam. The blood gushed from his spout-holes, falling in torrents upon the men in the boat, and coloring the sea. The whale, in his last agony, is a fearful creature. He rose perpendicularly in the water, head downwards, and again writhed and lashed the sea with such force, that the people in the retreating boats, though ten miles distant, heard the thunder of the sound distinctly. The exertion was too violent to last long:—it was the

signal of his dissolution. His life-blood ceased to flow, and he turned his belly to the sun! The wail of the Grampus floated triumphantly above the body of the slaughtered Leviathan of the deep—and the peril of the hardy crew was over.

TALES AND SKETCHES, SUCH AS THEY ARE, by Wm. L. Stone, 2 vols.—Unwonted neglect on our part, and an accidental misplacing of these sprightly and agreeable volumes, have delayed this notice, which should have been given some weeks ago. We mention them now with unavoidable brevity—our columns being crowded with matter previously prepared—because we are unwilling to continue the delay. In the deluge of multifarious publications through which we wade every week, we are happy now and then to find a work strictly American, though it is seldom that we have to notice two publications on the same day to which that characteristic applies. It is certainly no mean recommendation of "Tales and Sketches." They come before the world unpretendingly, and from a writer who, in a different capacity, has long entertained and effectually served the public. We are glad to see that he can occasionally depart from the drudgery of a daily paper to luxuriate in the regions of fancy, and, while doing so, can weave into his fiction so much that is valuable and interesting of historical fact.

A BRIEF VIEW OF THE CONSTITUTION OF THE UNITED STATES, by Peter S. Duponceau, LL. D.; Philadelphia.—This work by the venerable provost of the Law Academy of Philadelphia, should be perused by every one who would familiarize himself with the opinions of one of the most celebrated lawyers in our country upon the most important instrument in its archives. The volume is for sale by Mr. Wiley, Nassau street, and also at Carvill's.

JOHN MARSTON HALL, by the author of *Richelieu*; 2 vols., Harpers.—The mantle of Sir Walter, like that of Shakspeare, will hardly within the same century, if ever, descend upon another. But among all the competitors for the wand of the great magician, Mr. James certainly deserves the palm for success, in the heroic romance. He treads more gracefully, and with more vivacity, in the steps of his great master than any of his pupils; though the measure in contrast is still but the walk of a minuet to the march of a giant. The present production will be read with pleasure by his admirers as reviving agreeable associations with a former favorite,—the hero being "Little Ball O'Fire," the spirited urchin that figures in so many scenes in the life of "Henry Masterton." The scene of the story is laid at the French Court in the reign of Louis the 14th, and the details are managed with all that minute knowledge and keeping of costume in which Mr. James is second only to the great Scottish antiquarian.

THE COMPLETE WORKS OF SIR WALTER SCOTT, with a Biography, &c. &c., Vol. VI. New York—Conner & Cooke.—In calling the attention of our readers again to this cheap publication, we could only repeat the terms of approval applied to the previous volumes, the present one being, in every respect, equal to the others. It contains, with *Tales of a Grand Father*, the *Lives of the Novelists* and his *Notice of Byron*, &c.

LECTURES ON PHRENOLOGY, DELIVERED BEFORE THE YOUNG MEN'S ASSOCIATION FOR MENTAL INSTRUCTION, IN THE CITY OF ALBANY; by Amos Dean.—We had marked a long extract from this work, for quotation, as the best mode of showing its claims upon the general reader. It shall be given hereafter; and, in the meantime, we can only observe, that those who would be readily initiated into the new science that is so rapidly gaining ground in the teeth of all ridicule and opposition, are much indebted to Mr. Dean for his neat and comprehensive essay.

THE REPUBLIC OF LETTERS, No 3.—We have intended as each successive number appeared, to no-

tice this judicious publication. To those who are not apprized of the plan upon which it is conducted, it is merely necessary to observe, that it is a weekly issue of a beautifully printed quarto sheet at six cents a number, each number containing one or more octavo volumes. When it is added that "The Man of Feeling" and "The Vicar of Wakefield," two of the finest classics in our language, may thus be had for the sum of 12 1/2 cents, it will be seen, that both from the true taste and the liberality with which it is conducted, there can be no publication which promises better to diffuse abroad a knowledge of the models of polite literature than the Republic of Letters. The last number published contains "The Tales of the Hall," by Crabbe, one of the most vigorous of modern writers. His style, indeed, though strikingly original, is often overdone; and his subjects are of so coarse a character as frequently to leave a harsh and unpleasant impression upon the reader; but there is ever a truth to nature in her humblest guises, which renders his minute delineations and skillful dissections of character invaluable.

North American Review.—The eighty-fourth number of this journal will appear on the first of July. The contents are as follows:—1. Life of Schiller.—2. The Philosophy of History.—3. Roman Literature.—4. Usury and the Usury Laws.—5. The Free Cities of Flanders.—6. Life and Writings of Crabbe.—7. Helen.—8. Miss Peabody's Key to History.—9. Origin and Character of the Old Parties.

[From the Journal of Commerce.]

FURTHER FROM LIBERIA.—In yesterday's paper we announced the death of Rev. Matthew Laird and wife missionaries of the Western Foreign Missionary Society, who arrived in the Colony on the 31st December. We have now the painful duty to add the death of Rev. John Cloud, missionary of the same society, and Rev. S. O. Wright, of the Methodist Missionary Society. The wife of the last named gentleman died in February last. Her death has been before announced. Among the emigrants by the *Jupiter*, which arrived at the Colony on the 31st December, there had been no deaths except a woman of seventy five years, and two children under twelve. Mr. and Mrs. Spaulding, Methodist Missionaries, were to leave Liberia on the 12th of May, in the ship *Argus* for Boston. Their object is, to procure a reinforcement and recruit their health. They are soon to return to the Colony, as is also Mr. Temple, a colored Assistant missionary, who has arrived in the *sch. Edgar* at this port. Mr. Jones, who has also arrived in the *Edgar*, is about to proceed to Kentucky for his family. The general health of the Colony is good. We have had the pleasure of an interview with Messrs. Temple and Jones, and are happy to state that they are in excellent spirits in regard to the Colony, and think it the best place for the colored man which the world affords. Mr. Temple has not fully recovered from the effects of the fever. Annexed is a letter from Rev. Mr. Pinney, Colonial Agent, to R. S. Finley, Esq.

Monrovia, May 10, 1834.—Mr. Temple, the last of the band of Presbyterian missionaries who landed in Africa the first of January last to try its perils, will hand you this note, and communicate more at length the tidings my pen is loth to speak.

Mr. T. will, I trust, do good while at home. He is desirous of ordination and expects to return very soon. The vessel sails in about two hours, and time is short. Our losses do not dishearten me. I trust the church will not be discouraged. God is about to try us, but I hope some good will be found, and faith which shall not tremble though a thousand fall.

From Liberia papers received at this office.

Monrovia, Jan. 29.—Native Coffee Trees.—Professor Wright, in the Colonization debate between him and Mr. Finley, was positive that coffee trees were not indigenous to this part of the coast, but came from an African Island. If the Professor would take the trouble to pay us a visit, we would show him a dozen varieties of the coffee plant, in our immediate vicinity, growing spontaneously in our woods.

Grand Bassa Settlement.—Recent accounts from *Edina*, represent this settlement in a most flourishing condition, and so industrious had the settlers been, that 15 shingled houses had already been erected.—The recent purchase of the Devil's Bush, had given

great satisfaction to all parties, and but little time would elapse, when that spot, so long consecrated to the unhallowed rites of Moloch, would be covered with Christian inhabitants.

Monrovia, Feb. 25.—Houses for New Emigrants.—Two extensive buildings (one of which is nearly completed) are now erecting in a pleasant part of our town for the reception of new comers.

Erection of a Light House on Cape Messurado.—It is proposed to erect a Light House on Cape Messurado, for the benefit of our infant commerce. The want has long been felt, and several ship-masters have wondered that a small tax had not been levied before now, to defray the expenses of the same.

Erection of a Sawmill.—Measures are in train for the erection of a Sawmill on the creek nearly opposite Millsburgh, on the St. Paul's River. It is a pity that we have not one or two steam mills in operation for sawing lumber, as the natives have lately adopted the commendable plan of rafting down logs suitable for sawing, to our water's edge; and now they have adopted the plan themselves, there will be no difficulty in keeping them so employed, if suitable encouragement is held out.

Price of Rice and Coffee in the Settlement.—From a perusal of a late number of the *Genius of Universal Emancipation*, which has been politely furnished us by the Editor, a person would be led to believe that our Colonists really paid at the rate of 25 cents per pound for rice, and 70 cents for coffee. This is something new to us and our readers, to hear that African rice has been sold by the pound in our market.

We assert without fear of contradiction, that we have never known rice, (in times of greatest scarcity, which is during the rains, before the new rice is fit for cutting,) to sell for more than two dollars and fifty cents per bushel. To arrive at a fair rate, at which rice should be quoted, will be, to put it down at one dollar and sixty cents the bushel; as during the season when all prudent persons should lay in their rice, it can be purchased for one dollar per bushel, and often for less. Estimating a bushel at sixty-eight pounds, it would then give nearly two one-half cents per pound, instead of twenty-five. A wide difference. Coffee grows wild around us, and it a little encouragement was held out to the natives, might be purchased at a moderate rate, at least enough for home consumption.

Our Colonists have not paid much attention to the culture of this important berry, but we know one family, who have for years raised more than enough for their own consumption from trees of their own planting. We have never seen sixty cents per pound paid for coffee yet, and we are doubtful if it has ever been.

LATEST FROM EUROPE.—By the ship *New York*, Captain Hoxie, which arrived last night from Liverpool, from which port she sailed on the 26th May we have received London papers to the 25th inclusive. The *Manchester*, Capt. Swift, had already put us in possession of Paris dates of the 24th; and by the *France*, which arrived to-day, our files are completed up to that time. The French papers are devoted to the obsequies of Lafayette, with which the Parisians seem to be wholly engrossed. In London, the critical political topic of Chure Reform was net less absorbing. "It again," says a London paper, "formed the prominent subject of discussion in the House of Lords last night. The Tory Temporal Peers and some of the Right Reverend Prelates, amused themselves with vehement discourses on the mode in which the Lord Chancellor brought in the Bills for the suppression of Pluralities and Non-Residence; that is to say, for moving their first reading without a more formal notice to their Lordships. We think that the Peers would better consult their public reputation if they would interest themselves more liberally in the subject matter of Church abuses and their remedies."

It is mentioned in one of the French papers, that M. Lafitte entertained the project of proposing to the Chamber of Deputies that the body of General LAFAYETTE should be deposited in the Pantheon, but renounced it on learning that it was the decided wish of the family that the directions of the deceased as to his interment should be scrupulously followed.

All the ministerial papers contain eulogies on this

consistent and persevering friend of human liberty. The military honors paid to him were those which belong to a General in Chief. The account of the funeral will be found below.

The following is a translation of the letter addressed by the President of the Chamber to his Son, in reply to one from him announcing his father's death.

Sir, and Dear Colleague.—The Chamber has learned, with deep sorrow, the loss she has just sustained. The death of General LAFAYETTE deprives the Chamber of one of its most illustrious members—of a great citizen, whom liberty has ever found faithful to her cause, in every period when she needed a defender. The revolution of July found him again at the head of that brave National Guard of Paris, whose patriotism and devotion have never failed to comport with the device of "Liberty, public order," inscribed on their banners.

The name of General LAFAYETTE will ever remain celebrated in our annals. He will appear there amongst the principal founders of the Constitutional monarchy, which he with us, cheered onward in its course, and which had his best wishes. Accept, &c.

Signed, DUPIN.

FRANCE.—"The Parisian papers (says a London paper,) continue to be much taken up with remarks upon the character of Lafayette, to whose memory, with the exception of the Carlist party, they do the justice which we have ourselves already rendered to him, of being a most respectable private character, an ardent patriot, but not very profound politician."

The funeral took place on Wednesday, and from the public character of the deceased, both as a member of the Chamber of Deputies and a General, was invested by the Government with all the imposing pomp which the attendance of numerous bodies of military never fail to give to processions of this description, and of the National Guards, who came forward in immense numbers, to join in giving effect to this parting act of homage to their venerable colleague.

Funeral of Lafayette.

From an early hour on the morning of the 22d of May, the Rue d'Anjou St. Honore, in which the hotel of the late lamented Lafayette is situated, and every street and passage in its vicinity, was crowded with citizens of Paris, hastening to pay their last tribute of respect and attachment to the illustrious deceased.

The funeral ceremony (says Galignani's Messenger, from the public character of the deceased, both as a member of the Chamber of Deputies and a General, was invested by the Government with all the imposing pomp which the attendance of numerous bodies of military never fails to give to processions of this description; while the attendance of the National Guards, who came forward in immense numbers, to join in giving effect to this parting act of homage to their venerable colleague, and the crowded state of the streets leading to the Church of the Assumption, where the funeral ceremony was to be performed, and from thence along the Rue de la Paix, the entire length of the Boulevard, and every spot near which the procession was to pass, showed the extent of the popularity, and the affectionate esteem with which the deceased was regarded by every class.

About half past seven the members of the various deputations appointed to take part in the procession began to arrive at the hotel, which was handsomely hung with black. Among these were numbers of staff officers, of the troops, and the national guards. Detachments of infantry were placed as guards of honor in the commencement of the Rue de Faubourg St. Honore, the Rue Royale, the Rue St. Florentin, and other points by which the procession was to pass.

At a few minutes after nine the body was brought down and deposited in the hearse, which was decorated with twelve tri-colored flags, three at each corner; it was surmounted by plumes, and had the letter L on various parts of the drapery, and was drawn by four black horses. The cordons of the hearse were held by four persons of distinction, friends of the deceased. After a few minutes spent in preliminary arrangements, the funeral march struck up, and the cortege began to move. The hearse was preceded by muffled drums, deputations from various legions of the National Guards of Paris, and the Banlieu, the 61st Regiment of the Line, and a regiment of Red Lancers. The hearse followed, which was immediately succeeded by the Deputations of the Chambers of Peers and Deputies; other deputations followed, from various public bodies, among whom we perceived numbers of foreign

ers, particularly Americans and Poles. These were succeeded by *Chefs de Butillon* of the National Guards and the Line, and these again followed by other detachments of National Guards and troops of the Line, headed by muffled drums and full military band; two pieces of cannon, and detachment of the 1st regiment of Artillery, with a numerous body of cavalry of the National Guards. Four of the Royal carriages, three private ones of the General, followed by another regiment of the Lancers, several private carriages, and a body of Municipal Guards, wound up the procession.

The immense crowds, and the small space left for the military, occasioned considerable confusion previous to arriving at the church, for want of room the hearse being stopped on one occasion more than a quarter of an hour. The coffin was then taken into the church, and the funeral ceremony being performed, the procession again proceeded; and, notwithstanding the incalculable crowds assembled, has passed the Rue de la Paix, and is now (as we are going to press) far advanced on the Boulevard, with the most perfect order and regularity.

All the Ministers (says the same Gazette) on leaving the Council held by the King on the preceding day at the Tuilleries, went in a body to make a visit of condolence to the family of Gen. Lafayette. They were received by M. George Lafayette, and were conducted by him to view the body. An immense number of persons of all classes called in the course of the day, and inscribed their names as participants in the general grief.

At a meeting of the citizens of the United States in Paris, held on the 21st at the Hotel of the American Legation, to take into consideration the most appropriate manner of expressing their sorrow for the loss they and their country have sustained by the death of the great and good Lafayette.—Thomas B. Barton, Esq. Chargé d'Affaires of the United States, was called to the chair, and Dunscomb Bradford, Esq. American Consul, was appointed Secretary.

The following resolutions were offered and unanimously adopted:

Resolved, That we have heard of the death of our illustrious fellow citizen, the virtuous Lafayette, with feelings of the deepest sorrow and regret—

Resolved, That the citizens of the United States, now in Paris, will attend in a body, the funeral of Lafayette, in testimony of the high respect they entertain for his exalted character, as the undeviating friend and defender of the liberties of their country, and of those of the human race.

Resolved, That a committee be appointed to address a letter of condolence to the family of Gen. Lafayette, expressive of their deep sympathy in the afflicting dispensation with which it has pleased Divine Providence to visit them.

Resolved, That as a further testimony of their high admiration for the virtues and perfect consistency of character of Lafayette, through a long life, and under the most arduous circumstances, they will wear crape upon the left arm for three months.

On the motion of Mr. Brooks, seconded by Mr. Adams, it was then

Resolved—That a copy of the foregoing resolutions be communicated by the Secretary of this meeting to the family of the illustrious deceased, and that the proceedings of the meeting be published.

On the motion of Mr. French, seconded by Mr. Blow, it was

Resolved, That the United States, as far as they are represented at this meeting, each furnish a member to constitute the committee to address the letter of condolence to the family of General Lafayette: whereupon, the following gentlemen, representing seventeen States of the Union, were, on the motion of Mr. Hayne, seconded by Alex. Claxton, Esq. U. S. Navy, named that committee:—

Dr. Wood, of Maine.
N. Niles, Esq. of Vermont.
Charles Brooks, Esq. of Massachusetts.
J. Dennison, Esq. of Connecticut.
Mr. Burns, and Mr. Brevoort, of New York.
Philip Kearney, Esq. of New Jersey.
Dr. A. B. Tucker, of Pennsylvania.
Alexander Claxton, Esq. U. S. N. of Maryland.
Rev. F. S. Mines, of Virginia.
Arthur P. Hayne, Esq. of South Carolina.
Dr. L. A. Dugas, of Georgia.
W. P. D'Arusment, Esq. of Indiana.
Dr. A. P. Elston, of Kentucky.
J. S. Pomeroy, Esq. of Mississippi, and
D. Urquhart, Esq. of Louisiana.

On the motion of Mr. Townsend, Mr. Barton and Mr. Bradford were *ex officio* placed on the Committee. After a short adjournment, the Chairman, in the name of the Committee, reported a letter of con-

dolence to the family of General Lafayette, which was unanimously adopted. On motion of Mr. Hayne, seconded by Mr. Brooks, it was resolved, that an eulogy on the illustrious character of the revered Lafayette be delivered before the American citizens at Paris. On the motion of Mr. Brewster, seconded by Mr. Niles, it was also resolved, that five gentlemen be named by the Chair, to constitute a Committee of Arrangements, to provide for the execution of the preceding resolution; whereupon, Mr. Brewster, Mr. Niles, Mr. Atherton, Mr. Brevoort, and Mr. Brooks, were named that Committee. It was then resolved, that the proceedings of this meeting be communicated by its Secretary to the Legation of the United States at Paris, with the request that they may be recorded on the books thereof—and the meeting adjourned.

DOG CHEAP.—It is stated that during the year 1833, there were no fewer than 30,000 Crosses of the Legion of Honor conferred by the French Government, and that up to the 1st of May, in the present year, the number granted had exceeded 18,000. This approaches, in the distribution of honors, very nearly to the principle of universal suffrage.

The Chamber of Deputies had voted the budget of receipts, and has thus closed its labors. It will probably not again be convoked, except to hear the word dissolution. All France appears tranquil at present.

The Marquis de Fitzjames, who was sentenced by the Court of Assizes for the Somme, to imprisonment for three months, for chalking on the wall at a public inn, the words "Vive Henri V." has surrendered himself at the prison at Amiens, to undergo his penalty.

A splendid sword has been subscribed for, and presented to Marshal Gerard, in commemoration of the capture of Antwerp.

In 1833 the number of Volunteers who enrolled themselves in the army, amounted to 5591.

SPAIN.—[The Cortes are convoked to assemble on the 24th July. The Carlists still continue to struggle against the Government of the Queen; and one of their chiefs, General Zumalacarraguy is accused of acting with the greatest ferocity. Colonel O'Donnel, the son of the Count D'Abisbal, having fallen into his hands, the following is given as the dialogue which occurred between him and Carlist's General's Aid-de-Camp, before his execution.]

"Aid-de-camp: My general desires me to offer you not only quarter, but your continuation of your present rank, with a certain command, if you will swear fidelity to the King, Don Carlos V."

"O'Donnel: I cannot be a traitor to my honor. I have sworn fidelity to the Queen, as well as to the nation, represented by its Cortes. I have no other sovereign than those."

"Aid-de-camp: Reflect well on what you say, colonel—the death of an officer like yourself will be pitiful."

"O'Donnel: To die for my country, is to die for immortality."

"Aid-de-camp: And what shall I say to my general?"

"O'Donnel: That I will give a certain sum of money for my release, but that if my release is to be effected at the cost of a perjured oath, I would rather die a thousand times than take it."

"In consequence of this obstinacy, O'Donnel was ordered to be shot. He marched with calmness and serenity to the ground, exhorting the soldiers who were to suffer death with him to bear their fate like men, and exclaimed at the moment that the word 'fire' was given—'We die in defence of the Queen and the rights of the nation.'"

MADRID, MAY 14.—I have received the Gazette in time for the Courier. It contains, as you will see, an order from Martinez de la Rosa to the Captain-General of Castile, instructing the Sub delegate of Fomento and the Corregidor of Madrid to prepare suitable chambers for the meeting of the Courts of both one and the other Estamentos, which is to take place on the 24th July next. The order is dated Aranjuez, May 12.

The same Gazette contains a Royal order appointing Jose Martinez de San Martin to the post of Superintendent General of the Police of the Kingdom, as well as some orders for changes in the municipality of Jerez, near Cadiz, in consequence of a Carlist disturbance which took place there on the 7th inst.

The Four per cents yesterday were at 55 1/2. M. Martinez, a merchant of Cadiz, has offered to equip 100 Urbanos at his own expense.

The Royal Council of Spain and India will be installed on the 15th inst.

Intelligence has been received this morning of the capture of and declaration of Coimbra, on the 8th, in

favor of Donna Maria, and of the junction of Rodil and the Duke of Terceira. This news has raised the Funds one per cent, and the Fours are now at 57.

A conspiracy was discovered here last night, the particulars of which have not transpired. It is not a very serious matter.

PORTUGAL.—[The news from Lisbon is to the effect that Figueras and Coimbra have surrendered to the Pedroites. Both are said to have fallen without a blow being struck. Figueras was taken possession of by Admiral Napier, and Coimbra by the Spanish and Portuguese forces: the former under the command of General Rodil, and the latter under that of the Duke of Terceira. The Miguelites are still strong in the province of Beira, and their superiority in the southern part of the kingdom undisputed.]

Doubts continue to be expressed, in consequence of the non-arrival of the ratification of the Treaty from Lisbon, that Don Pedro hesitates to attach his signature to the State Document; but we are informed, upon what we consider ample authority, that the Treaty has been signed, and it will be conveyed to this country by the Government steamer, the Countess of Pembroke, which was especially appointed to carry out the Treaty and to bring back the document ratified.

GERMANY.—The Augsburg Gazette of the 18th of May, has the following, of the 11th, from Vienna:—"The Spring Festival will be celebrated tomorrow by a *dejeuner d'honneur* in the Imperial Gardens; all the Diplomats are invited. Most of the Germanic Ministers have requested audiences of leave, which indicates that the Congress is about to close. The Emperor will quit the capital for Schönbrunn on the 13th."

SWITZERLAND.—The *National Genevois*, in a postscript of the 9th of May, says—"A traveller from Rumelitz tells us a corps of troops, stated at 50,000 men, is expected in Savoy; it was even said that preparations were made to receive them." Fifty thousand Fiedmontese! a large number. The Journal adds:—"Several pieces of cannon are mounted on their carriages, in order that our ramparts may be properly armed in case of need."

ENGLAND.—*London, May 24.* In the House of Lords, yesterday, several petitions were presented for the protection of the Established Church, and against the claims of the Dissenters. Some petitions were also presented, praying for the separation of Church and State, and in favor of the Dissenters' claims.

The Earl of Harrowby, on presenting petitions for the protection of the Church, admitted that the real grievances of the Dissenters ought, as far as was practicable, to be redressed. But he called upon their Lordships to take care that they did not place that body in the 'vantage ground, by which they might be enabled to continue the attack that they had avowedly made against the Established Church. He trusted that their Lordships would agree with him, and not give their assent to any thing that would endanger the safety of that fabric.

We hear that it is finally determined that all foreign papers shall be admitted into England by payment of three-halfpence per paper, and that the same postage will be exacted for all English papers forwarded to the Continent. It is asserted, but we cannot believe it, that none but newsmen registered for the purpose, will be allowed to receive papers from the Continent.—[Morning Chronicle.]

BELGIUM.—A letter from Frankfort, dated May 2d, says—

"The difficulties in which the question of the cession of part of Luxemburg to Belgium are involved do not appear likely to be soon surmounted. The Dutch Envoy often finds it necessary to ask for new instructions from his Court, and no progress is made. As for the Austrian Envoy, Baron Von Neumann, his time seems almost entirely occupied in journeys from Biberich to Frankfort, and from Frankfort to Biberich. He too appears to be very much in want of instructions."

The Prince of Orange has returned to the Hague from the army.

The New Orleans Bulletin of the 12th has the following:—

Brig General Santa Anna, Vanstaveren, five days from Tampico, reports that a new revolution had broken out in Mexico, that the troops of Orizava and Cordova had declared for a military government, and to maintain the Catholic religion in all its apostolic forms and rules; that the troops of Puebla had declared for religion in the same tone, but to sustain the Federal government; that there had been some blood shed in Puebla; that the Northern States of

Zacatecas and San Louis Potosi, had determined to sustain the forms in religion and the present government.

SUMMARY.

APPOINTMENTS BY THE PRESIDENT.

By and with the advice and consent of the Senate.
John Forsyth, Secretary of State, in the place of Louis McLane, resigned.

Levi Woodbury, Secretary of the Treasury, in the place of Roger B. Taney, rejected.

William S. Holabird, to be Attorney for the District of Connecticut.

Thomas Turner and Fleet Smith, to be Justices of the Peace for the County of Washington, in the District of Columbia.

Charles Scott to be a Justice of the Peace for the County of Alexandria, in said District.

PENSACOLA, June 14.—*Naval.*—The U. S. sloop of War Vandalia, left here, somewhat unexpectedly, on Tuesday last, in search, we understand, of the schooner Experiment. Since the Experiment left Havana, nothing has been heard of her. Fearing that some accident may have happened to her, the commanding officer of the squadron has promptly despatched the Vandalia in quest of her. We learn that the Experiment left this port with only five weeks' provisions of board, and she has been absent upwards of seven weeks.

The suggestion contained in the following paragraph, should not be forgotten:

Some time ago, the British Government sent to that of France a complete set of its Parliamentary papers, consisting of about 600 volumes folio—the result was a similar present from the Government to ours.

A present of a somewhat similar character has been sent to the principal Libraries of the United States. This is well, as it will no doubt lead to a reciprocal exchange on future occasions. We know from experience that American constitutional documents are almost impossible to be found in London. Having had occasion a few years since, to refer to some works which are to be met with in every considerable Library in America, we searched some of the public Libraries in London, but in vain. We have often heard this complaint from others.—[Montreal Advertiser.]

Cholera at Cincinnati.—The Cincinnati Intelligencer of the 23d ult. says: "We hear of repeated cases of cholera in this city, some of which have proved fatal. Many complain of the premonitory symptoms."

Among the deaths at Louisville, of cholera, are those of John F. Anderson, of the firm of Thomas Anderson & Co.; Mrs. Margaret Grey, a native of Philadelphia, and wife of Mr. Jackson Grey, of the New Orleans theatrical company. It has been made certain, that those persons who were supposed to have been poisoned by partaking of food prepared for a wedding party, were cases of cholera.

The Louisville Journal says:—"The Cincinnati Republican has been misinformed in several particulars concerning the recent deaths in this place. The custard was not served to the company at the wedding, but sent to the houses of the guests next day. It was a day or two before any were attacked; the number was not more than twelve or fifteen, of whom about eleven have died. There is great doubt whether any poison has been employed; none has been detected with certainty, in the examinations which have taken place. The Faculty of Louisville have had a meeting on the subject, and are about equally divided in opinion whether poison was or was not used."

The Atlantic Insurance Company have declared a dividend of ten per cent, for the last six months, payable on Monday next.

[From the Journal of Commerce.]

New Banks.—We learn by a gentleman from Poughkeepsie, that the books for the capital stock of the Farmers and Manufacturers Bank in that village, were closed on Friday last—\$1,650,400 having been subscribed. Capital stock \$300,000. The stock of eight banks chartered or increased by the Legislature at the last session, has been offered, with the following results.

Names.	Where.	New Capital.	Subscribed.
Phoenix Bank	New York,	\$1,000,000	\$3,146,925
Lafayette Bank	do	500,000	1,649,000
Commercial Bank	do	500,000	1,396,150
Albany City Bank	Albany	500,000	1,142,900
Farmers' & Manfrs	Poughkeepsie	305,000	1,650,400
Highland Bank	Newburgh	200,000	951,400
Orleans Co. Bank	Albion	300,000	680,300
Sacketts Harbor Bk	Skt's Harbor	200,000	about 600,000
		\$3,400,000	\$11,316,975

The Rev. Wm. M. Carmichael has resigned the Rectorship of Christ Church, Rye, Westchester co., and accepted that of St. James', Hyde Park, Dutchess county.—[Churchman.]

The schr. *Sabina*, at New Orleans, reports the wreck of the schr. New Packet, Capt. Ramsdell, which took place on the 20th May, at the bar of Aransas. She is a total wreck. We learn (says the New Orleans Bulletin of the 18th) by the mate, that 82 of the Irish emigrants which went out in the N. P., died of the cholera before they reached Aransas, together with three of the crew.

We find in the Boston Liberator, Mr. Garrison's paper, the following notice, the Editor vouches for the character of the advertiser, and certifies that he is serious in his proposals, and it is actuated by disinterested and general motives:—

A Friend of Equal right, is convinced that our colored brethren and sisters are entitled to all the rights and privileges which are claimed by the whites; that prejudice against color is extremely absurd; and that as long as this prejudice exists, its victims will feel the yoke of oppression crushing them to the earth. He takes the liberty also to state, (being himself what is termed a white man,) should he meet with a suitable opportunity, he is convinced that it would be his duty, and it is his determination to bear testimony against this prejudice by marrying a Colored Woman.

Information would be thankfully received of any young respectable, and intelligent colored Woman, (entirely or chiefly of African descent,) who would be willing to endure the insults and reproaches that would be heaped upon her for being the partner of a white man; and who is either in low circumstances, or would be willing to cede all she has or may have of this world's goods, to the American Anti-Slavery Society, that the mouths of gainsayers may be stopped. Information sent by letter (post paid) to E. K., Chester, Penn. will meet with due attention.

Locusts.—The Flatbush woods are swarming with locusts, which the warm weather seems to have emancipated from their chrysalis. They are rather smaller than the ordinary green locusts, with black bodies, red eyes, and yellow legs and wings.—[L. I. Star.]

[FOR THE NEW YORK AMERICAN.]

Translated from the French.

Can Love exist without Jealousy?

I cannot persuade myself that the stoics, who had held the first rank among the ancient philosophers, could by their discipline procure their followers an exemption from every kind of passion. They knew very well that the passions were so natural to them, that it would be impossible to destroy in man what was so deeply engrained in his constitution. Seneca, who was the master of that sect, freely confessed that the wise man cannot prevent emotions from rising in his soul, but that reason can prevent their swelling into excess. We are a compound of the spiritual and the material: our spirits assimilate us to the angels, and our bodies partake of the animal nature. On the one hand, Moses informs us that the angels have been envious and presumptuous, and on the other, we see every day that animals give a loose to unrestrained passions. We know that maladies are as natural to man as his passions, and that no one has ever attained exemption from them. The body is composed of parts so different in temperament, and we are exposed to so many accidents, that it is impossible for us to escape all bodily discomfort. Some maladies are severe, and others slight; some men who have a good temperament are never troubled with any but slight disorders, which soon pass away. It is the same with the passions of the heart; and wise men, who admit they are not exempt from them, tell us they have none but slight emotions, and that while in some the passions are so powerful as to be dominant, in others, their hold is not so strong but that they may be controlled by salutary remedies.

Since, then, the passions are natural to man, jealousy, which is one of the strongest, and is compared by the Scriptures to death and hell, jealousy, the offspring of love, we are constrained to believe, will never give absolute quarter to any who love. We will expatiate a little in proof of this.

There is no need of our entering here into a description of love. The reader will find many books which unfold its nature; it is sufficient here to speak of jealousy, which is its offspring. We have said elsewhere that beauty in a person of a different sex has fascinations so great that it enchains us, even against our will, and whatever resistance we make is insufficient to defend us against its at-

tacks. Such are its attractions that it gets within our hearts and acquires the mastery of our inclinations. When love is ardent, it keeps the image of the loved object present to our thoughts, though the object be absent, and the individual takes pleasure in discoursing of the loved one. A mind that is in this state, is not capable of accurate discrimination, it receives incorrect ideas mingled with the true; delusions slip in and impose themselves upon it, and it is led to distrust, by the suspicions and conjectures it fabricates. Perhaps a man fears that he has not sufficient agreeable qualities to retain the favor of the loved individual, and thence entertains fears that she is inconstant, and that she has ceased to love him. The weakness of our nature and the delusions of love then transmute these conjectures into proofs, and these doubts into convictions, notwithstanding the assurances we may receive from the individual. Indeed, we can hardly love ardently without jealousy; for after having attained that high degree of passion in which the changeableness of our nature renders it impossible for us to continue, we are obliged to fall into coldness or hatred, at which we arrive as we pass through the gate of jealousy.—Celsus, the illustrious physician, who was a master of the knowledge of human nature, tells us that a man who is become more corpulent than is usual with him, should be in apprehensions of falling sick, because things in this world being inconstant, he cannot continue long in his usual exuberance of health. In like manner, the intelligent observer, when he sees a man the slave of excessive and extravagant love, knows that it cannot long be maintained in the same state. We might here introduce the similitude of sheet iron stoves; soon hot and soon cold again.

A person excited by a strong passion, cannot judge fairly. The mind perplexed with difficulties, and unable to separate the tangled web, is brought into wild disorder, and is subject to continual vacillation. After having combated appearances, and cut off one of the heads of the hydra, it yields again to the whimsies of love; takes chimeras for truths, and the hydra reproduces ten heads for the one it had lost. Then again seeking by all methods to disengage itself from the doubts it has conjured up, curiosity is roused, and examines every trifling circumstance. The object is watched with a scrutinizing and severe espionage. This extravagant mode of proceeding renders the matter worse, and instead of effecting a cure, aggravates the disorder. This is what the ancients intended to convey by the fable they have narrated, that Vulcan disgusted with the infidelities of his wife, resolved to revenge himself upon her by proclaiming his jealousy in the presence of all the gods, expecting them to espouse his cause. But this public disclosure brought him into disgrace among them, and they drove him from Heaven, and his fall to earth brought upon him the discomfort of a broken limb and perpetual lameness. Such is the fate of the jealous; for the sake of exposing the frailty of their wives, they draw upon themselves the derision of the world, and fix a lasting stain upon their own reputation.

They who are accustomed from youth to control their passions, may with ease prevent them from quickening into tumultuous precipitation. Julius Cesar had such force of mind, that, though he had sufficient cause for jealousy, he never succumbed to this horrible passion. That illustrious man did not clamor in public about his domestic injuries. He knew that if he did, even boys would deride him.

Women are by nature more subject to jealousy than men. Being more feeble, they stand in need of masculine protection and succor, and are apprehensive of losing the affection of one from whom they expect them; and as they are also more constant than men, the stream of their love flowing constantly towards the same object wears a deeper channel, and we have observed that jealousy is seldom the attendant of any love but that which is strong and ardent.

Great minds can generally, by the force of reason, resist jealousy, which they receive only at the gate, without admitting it into the mansion. A prudent man, says Aristotle, ought to know the honor that is due to his wife, his children, and himself, and not willfully bring any cloud over it, to obscure its brilliancy.

Having in this chapter been led a little out of my way by the consideration of a passion which is a blot upon love's escutcheon, I shall in my next chapter inquire whether the gay and frolicsome, or the timid and diffident, are most ardent in their attachments; and shall also offer some considerations on the question which is the easier, to gain the affection of a female or to retain it.

BRADDOCK'S DEFEAT.—We extract, to-day, from the appendix to Sparks's edition of the writings of Washington, a notice of the French account of this affair, which will be found interesting. It corresponds generally with that given by Gen. Lafayette, of the same affair, while last in this country, but differs in one point. It seems Captain Beaujeu, who suggested and led the expedition from Fort Du Quesne, was killed, and that the victory was completed by Capt. Dumas; and it must have been from the latter that the Monsieur Du Contrecoeur snatched the laurels.—[Pittsburg Gaz.]

"No circumstantial account of this affair has ever been published by the French, or has it hitherto been known from any authentic source what numbers were engaged on their side. Washington conjectured, as stated in his letters, that there were no more than three hundred, and Dr. Franklin, in his account of the battle, considers them at most as not exceeding four hundred. The truth is, there was no accurate information on the subject, and writers have been obliged to rely on conjecture.

In the archives of the *War Department*, at Paris, I found three separate narratives of this event, written at the time, all brief and imperfect, but one of them apparently drawn up by a person on the spot. From these, I have collected the following particulars:

M. de Contrecoeur, the commandant of Fort Duquesne, received intelligence of the arrival of Gen. Braddock and the British regiments in Virginia. After his remove from Will's Creek, French and Indian scouts were constantly abroad, who watched his motions, reported the progress of his march, and the route he was pursuing. His army was represented to consist of three thousand men. M. de Contrecoeur was hesitating what measures to take, believing his small force wholly inadequate to encounter so formidable an army, when M. de Beaujeu, a captain in the French service, proposed to head a detachment of French and Indians, and meet the enemy in their march. The consent of the Indians was first to be obtained. A large body of them was then encamped in the vicinity of the Fort, and M. de Beaujeu opened to them his plan, and requested their aid. This they at first declined, giving as a reason the superior force of the enemy, and the impossibility of success. But at the pressing solicitation of M. de Beaujeu, they agreed to hold a council on the subject, and to talk with him again the next morning. They still adhered to their first decision, and when M. de Beaujeu went out among them to inquire the result of their deliberation, they told him a second time that they could not go. This was a severe disappointment to M. de Beaujeu, who had set his heart upon the enterprise, and was resolved to prosecute it. Being a man of great good nature, affability, and ardor, and much beloved by the savages, he said to them—"I am determined to go out and meet the enemy. What! will you suffer your father to go out alone? I am sure we shall conquer." With this spirited harangue, delivered in a manner that pleased the Indians, and won upon their confidence, he subdued their unwillingness, and they agreed to accompany him.

It was now the 7th of July, and news came that the English were within six leagues of the Fort. This day and the next were spent in making preparations, and reconnoitring the ground for attack. Two other captains, Dumas and Liguery, were joined with M. de Beaujeu, and also four lieutenants, six ensigns, and two cadets. On the morning of the 9th they were all in readiness, and began their march at an early hour. It seems to have been their first intention to make a stand at the ford, and annoy the English while crossing the river, and then retreat to the ambuscade on the side of the hill where the contest actually commenced. The trees on the bank of the river afforded a good opportunity to effect this manoeuvre, in the Indian mode of warfare, since the artillery could be of little avail against an enemy, where every man was protected by a tree, and at the same time the English would be exposed to a point blank musket shot in fording the river. As it happened, however, M. de Beaujeu and his party did not arrive in time to execute this part of the plan.

The English were preparing to cross the river, when the French and Indians reached the defiles on the rising ground, where they posted themselves, and waited till Braddock's advanced columns came up. This was a signal for the attack, which was made at first in front, and repelled by so heavy a discharge from the British, that the Indians believed it proceeded from artillery, and showed symptoms of wavering and retreat. At this moment, M. de Beaujeu was killed, and the command devolving on M. Dumas, he showed great presence of mind in rallying

the Indians, and ordered his officers to lead them to the wings and attack the enemy in flank, while he with the French troops would maintain the position in front. This order was promptly obeyed, and the attack became general. The action was warm and severely contested for a short time; but the English fought in the European method, firing at random, which had little effect in the woods, while the Indians fired from concealed places, took aim, and almost every shot brought down a man. The English columns soon got into confusion; the yell of the savages, with which the woods resounded, struck terror into the hearts of the soldiers, till at length they took to flight, and resisted all the endeavors of their officers to restore any degree of order in their escape. The rout was complete, and the field of battle was left covered with the dead and wounded, and all the artillery, ammunition, provisions, and baggage of the English army. The Indians gave themselves up to pillage, which prevented them from pursuing the English in their flight.

Such is the substance of the accounts written at the time by the French officers, and sent home to their government. In regard to the numbers engaged, there are some slight variations in the three statements. The largest number reported is two hundred and fifty French and Canadians, and six hundred and forty-one Indians; and the smallest, two hundred and thirty-three French and Canadians, and six hundred red Indians. If we take a medium, it will make the whole number led out by M. de Beaujeu at least eight hundred and fifty. In an imperfect return, three officers were stated to be killed, and four wounded; about thirty soldiers and Indians killed, and as many wounded.

When these facts are taken into view, the result of the action will appear much less wonderful, than has generally been supposed. And this wonder will be still diminished, when another circumstance is recalled to, worthy of particular consideration, and that is, the shape of the ground on which the battle was fought. This part of the description, so essential to the understanding of military operations, and above all in the present instance, has never been touched upon, it is believed, by any writer. We have seen that Braddock's advanced columns, after crossing the valley extending for nearly half a mile from the margin of the river, began to move up a hill, so uniform in its ascent, that it was little else than an inclined plane of a somewhat crowning form.—Down this inclined surface extended two ravines, beginning near together at about one hundred and fifty yards from the bottom of the hill, and proceeding in different directions till they terminated in the valley below. In these ravines the French and Indians were concealed and protected. At this day they are from eight to ten feet deep, and sufficient in extent to contain at least a thousand men. At the time of the battle, the ground was covered with trees and long grass, so that the ravines were entirely hidden from view, till they were approached within a few feet. Indeed, at the present day, although the place is cleared from trees, and converted into pasture, they are perceptible only at a very short distance. By this knowledge of the peculiarities of the battle ground, the mystery, that the British conceived themselves to be contending with an invisible foe, is solved. Such was literally the fact. They were so paraded between the ravines, that their whole front and right flank were exposed to the incessant fire of the enemy, who discharged their muskets over the edge of the ravines, concealed during that operation by the grass and bushes, and protected by an invincible barrier below the surface of the earth. William Butler, a veteran soldier still living (1832), who was in this action, and afterwards at the Plains of Abraham, said to me, "We could only tell where the enemy were by the smoke of their muskets." A few scattering Indians were behind trees, and some were killed in venturing out to take scalps, but much the larger portion fought wholly in the ravines.

[From the *Detroit Courier*.]

TECUMSEH.—The following incident in the career of this remarkable savage, which we do not recollect to have seen published, may not be altogether uninteresting to our readers, though we fail to embody it in the glowing language of an eye-witness by whom we chanced to hear it narrated. We give it with the more readiness, well knowing the importance attached by the public to any occurrence, however slight, serving to illustrate the character of a distinguished individual; and such the self-styled "King of the Woods" is universally allowed to have been, though border traditions have darkened the policy and patriotism of the native warrior with the deeper penciling of ferocity and blood-thirstiness.

The train of events immediately succeeding the memorable victory of Lake Erie on the 13th of September, 1813, are still fresh in the memory of many of our inhabitants. Among them was the evacuation of Fort Malden by the British, notwithstanding the earnest counsel of Tecumseh that it should be maintained to the last; at the same time proposing to skirt the forest below with his 'braves,' and foot by foot to dispute the progress of the assailants. It was a bright autumnal day when the army of Gen. Harrison, under the escort of Commodore Perry's fleet sailed from Put-in-Bay, for the purpose of occupying that important post. The warlike array of the little squadron still scored with the marks of the recent engagement; the fluttering of pennants and waving of the battle flags; and the files of soldiery crowding the boats, with their burnished muskets throwing back the glitter of the sun were described as having formed a truly animating and imposing spectacle. Their course lay along that part of the Lake which had been the scene of conflict but ten days previous, and terrible mementoes of that bloody victory still surrounded them in the floating bodies of the dead, blackened and mangled as they were tossed from the decks, the red coat of the Briton contrasted with the grey dress of the marine, or the blue jacket of the American tar. As they drew near the Canadian shore, an object was discernible flitting along the beach, now dashing with rapid movement down the entire front of the approaching fleet, and anon pausing as if to reconnoitre. A nearer view revealed a trim and athletic horseman mounted on an Indian pony, dressed in a belted hunting frock of smoked deer skin, with the appendage of long gaiters strapped below the knee, and the richly ornamented moccasins. It was the celebrated Tecumseh, who, notwithstanding the flight of his white ally, had lingered behind to ascertain the force of the invading enemy, and who, after singly confronting their floating batteries till satisfied of their numerical strength, leisurely withdrew as if in dignified defiance from the shore, to communicate the intelligence to the remaining inmates of the Fort.

Had the dauntless spirit and quick sighted sagacity of the Indian warrior been shared by his British brother, it is probable that our troops, after a harassing march to Malden, would have met with a warmer reception than they experienced from a few bed-ridden paralytics and a group of defenceless women and children.

While upon this subject it may not be amiss to advert to a scene which formed the concluding portion of the same narrative, though not materially connected with the name of Tecumseh. A part of the Kentucky troop of horse under the command of Col. Johnson, still following upon the tracks of General Proctor, after his discomfiture at the forks of the Thames, took possession of the Moravian town on that river which had but recently been evacuated by the enemy. These wild and fearless men to whom peril was but pastime, and who seem to have resembled in some particulars the tameless horsemen of the Don, were already rendered half furious at the cold and savage butcheries which had spilt the best blood of Kentucky like water. When orders were therefore given to fire the rows of the deserted log-cabins which constituted the town, these wild riders in the mere wantonness of daring scoured furiously through the streets, walled in as they were on either side by sheets of flame; their vicious and half-tamed animals to all appearance equally elated with the strange glee of their masters. The very appearance of these mad warriors must have been semi-barbarous, bearded and browned as they were by exposure, and attired in the costume of the back-woodsmen, with their carbines slung over their shoulders, the long hunting knife thrust into the belt of the deer-skin frock, and the canteen slung from the bear-skin saddle bows. This, with the roaring of the conflagration, the crash of the falling dwellings, the shouts of these desperate troopers, and the clattering of their horses as they burst ever and anon through the smoke and flames, must have presented as singular and stirring a picture as has ever been sketched even by the pencil of romance.

French Shop Girls.—The following piquant description of a Parisian Shop Keeper is given by Mr. Fay, in one of his late letters from France, published in the *New York Mirror*:

"Next to the quay I should rank the women, that extensive class of them I mean, who keep the shops. There is nothing under heaven like a young French girl behind a counter; she is thoroughly skilled in manner. It is brilliant and irresistible. They are graceful, pretty, attentive, respectfully flattering, and always good humored; and so different from those

honest gentlemen behind the counters of Maiden lane and Broadway, who tell you "the article cost three and sixpence, but you can have it for three shillings," that one scarcely knows how to treat them. Their air resembles that of a charming belle in the meridian of a drawing room; mere pecuniary calculations—such paltry matters as *demi francs* and *sous* are the last things that enter my head; and I stand scraping and bowing and stammering interjections in vile French, and pay ten times what my purchase is worth from mere politeness.

"They are arrant sirens after all: and have several times beguiled me into bargains like that of Franklin's whistle, for most of them consider it disreputable not to cheat a foreigner. Discovering that their obliging air was but a lure, and that my polite simplicity only plunged me deeper into the snare, I resolved to resist their demands with the bluntness of one who knew rather too much to be taken in so readily. Having occasion, therefore, for a pair of gloves, I suffered the counter to be heaped with untied packages—leather, kid and silk, cotton, linen, buckskin of every size, shape and color. The young girl toiled on with the same engaging smile. It was all in vain. Nothing would do. I turned to depart, when her perfectly cheerful "Ah, monsieur cannot suit himself. I am very sorry—pardon—*bon jour Monsieur*," arrested me on the threshold. I felt like a scoundrel. I had thrown her shop into confusion. It was but just to take something. I selected a trifle, worth perhaps two shillings, and handed her a dollar. She threw the glittering coin into the drawer, and gave me the sweetest smile in the world, and I bowed out with her "*bon jour, monsieur*," ringing in my ears like the tones of a flute. There is no sound in nature like the "*bon jour, monsieur*," of a pretty French woman, after she has cheated you out of a dollar. It is actually delightful—perfect music—but it costs you more than the opera."

[FOR THE AMERICAN.]
THE HEBREW REQUIEM.

"They made a funeral oration at the grave, after which they prayed, then turning the face of the deceased towards Heaven, they said—Go in peace."—[Hebrew Antiquities.]

Go thou in peace—we may not bid thee linger
Amid the sunlight and the gloom, of earth,
Where ev'ry joy is touched by sorrow's finger,
And tears succeed the brightest hour of mirth;
Thine upward gaze is fixed upon that dwelling
Where sin and sorrow never more are known,
And seraph lips, the loud Hosanna swelling,
Have caught the music of celestial tone.

Go thou in peace—thy home on earth now leaving
In the lone chamber of the dead to dwell;
Thou hast no portion in the sorrow heaving
The hearts whose anguish tears but feebly tell—
A path of light and gladness is before thee,
The hope of Israel in fruition thine,
And thou wilt gaze upon the beams of glory
Around the throne of Israel's God that shine.

Go thou in peace, why are the loved ones weeping
Around the spot where now thy form is laid,
There is no cause for grief that thou art sleeping,
Free from each trial, and untouched by pain;
Thy path has been through many a scene of sorrow,
Thy weary form has needed this repose;
Calm be thy rest until the eternal morrow
Its light and glory on thy dwelling throw.

Go thou in peace—temptation cannot sever
The tie that now unites thee to thy God;
The voice of sin—of unbelief—can never
Enter the precincts of thy low abode:
We leave thee here with mingled joy and sadness,
Our hearts are weak, our faith is low and dim,
Yet to the Lord we turn with chastened gladness,
And yield our friend—our brother up to Him.

M. J. W.

SURVEYORS' INSTRUMENTS.

Compasses of various sizes and of superior quality warranted.
Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by
E. & G. W. BLUNT, 154 Water street, corner of Maidenlane.

TOWNSEND & DUFFEE, of Palmyra, Manufacturers of Railroad Rope, having removed their establishment to Hudson, under the name of *Duffee, May & Co.* offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J. B. Jarvis, Eng. M. & H. R. Co., Albany; or James Archibald, Engineer Hudson and Delaware Canal and Railroad Company, Carbon dale, Luzerne county, Pennsylvania.
Hudson, Columbia county, New-York,
Jan'y 29, 1853.

LOCOMOTIVE ENGINES.

THE AMERICAN STEAM CARRIAGE COMPANY, OF PHILADELPHIA, respectfully inform the public, and especially Railroad and Transportation Companies, that they have become sole proprietors of certain improvements in the construction of Locomotive Engines, and other railway carriages, secured to Col. Stephen H. Long, of the United States Engineers, by letters patent from the United States, and that they are prepared to execute any orders for the construction of Locomotive Engines, Tenders, &c. with which they may be favored, and pledge themselves to a punctual compliance with any engagements they may make in reference to this line of business.

They have already in their possession the requisite apparatus for the construction of three classes of engines, viz. engines weighing four, five, and six tons.

The engines made by them will be warranted to travel at the following rates of speed, viz. a six ton engine at a speed of 15 miles per hour; a five ton engine at a speed of 18 miles per hour; a four ton engine at a speed of 23 1/2 miles per hour. Their performance in other respects will be warranted to equal that of the best English engines of the same class, with respect not only to their efficiency in the conveyance of burdens, but to their durability, and the cheapness and facility of their repairs.

The engines will be adapted to the use of anthracite coal, pine-wood, coke, or any other fuel hitherto used in locomotive engines.

The terms shall be quite as favorable, and even more moderate, than those on which engines of the same class can be procured from abroad.

All orders for engines, &c. and other communications in reference to the subject, will be addressed to the subscriber, in the city of Philadelphia, and shall receive prompt attention.

By order of the Company,

WILLIAM NORRIS, Secretary.

December 2d, 1853.

For further information on this subject see No. 49, page 772, Vol. 2, of Railroad Journal.

RAILWAY IRON.

Ninety-five tons of 1 inch by 1/2 inch,	Flat Bars in lengths of 14 to 16 feet counter sunk holes, ends cut at an angle of 45 degrees with splicing plates, nails to suit.
300 do. 1 1/2 do. 1/2 do.	
40 do. 1 1/2 do. 1/2 do.	
800 do. 2 do. 1/2 do.	
800 do. 2 1/2 do. 1/2 do.	
soon expected.	

250 do. of Edge Rails of 36 lbs. per yard, with the requisite chairs, keys and pins.

Wrought Iron Rims of 30, 33, and 36 inches diameter for Wheels of Railway Cars, and of 60 inches diameter for Locomotive wheels.

Axles of 2 1/2, 3, 3 1/2, 4, 5, 6, and 8 inches diameter for Railway Cars and Locomotives of patent iron.

The above will be sold free of duty, to State Governments and Incorporated Governments, and the Drawback taken in part payment.

A. & G. HALSTON,
9 South Front street, Philadelphia.

Models and samples of all the different kinds of Rails, Chairs, Pins, Wedges, Spikes, and Splicing Plates, in use, both in this country and Great Britain, will be exhibited to those disposed to examine them.

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ENGINEERING AND SURVEYING INSTRUMENTS.

The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely new: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy—also, a Railroad Goniometer, with two Telescopes—and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.

WM. J. YOUNG,
Mathematical Instrument Maker, No. 9 Dock street, Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.

In reply to thy inquiries respecting the Instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad. I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all Instruments of the kind are liable.

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sight, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to lateral angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,

JAMES F. STABLER, Superintendent of Construction of Baltimore and Ohio Railroad.

Philadelphia, February, 1853.
Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors.

E. H. GILL, Civil Engineer.

For a year past I have used Instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these Instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY R. CAMPBELL, Eng. Philad.,
German and Norristown Railroad

STEPHENSON,

Builder of a superior style of Passenger Cars for Railroads
No. 264 Elizabeth street, near Bleecker street,
New-York.

RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part of the New-York and Harlem Railroad, now in operation.
J35 1f

RAILROAD CAR WHEELS, BOXES AND OTHER RAILROAD CASTINGS.

Also, AXLES furnished and fitted to wheels complete at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to. Also, CAR SPRINGS.

Also, Flange Tires turned complete.

J8 ROGERS, KETCHUM & GROSVENOR.

NOVELTY WORKS,

Near Dry Dock, New-York.

THOMAS B. STILLMAN, Manufacturer of Steam Engines, Boilers, Railroad and Mill Work, Lathes, Presses, and other Machinery. Also, Dr. Rott's Patent Tubular Boilers, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited.
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INSTRUMENTS.

SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

EWING & HEARTT, at the sign of the Quadrant, No. 53 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude.

For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewing & Heartt.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable. They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES F. STABLER,
Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' Instruments of your Manufacture, particularly Spirit Levels, and Surveyors' Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These Instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

WILLIAM HOWARD, U. S. Civil Engineer.

Baltimore, May 1st, 1853.
To Messrs Ewing and Heartt.—As you have asked me to give my opinion of the merits of those Instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming acquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprise so well merits, I remain, yours, &c.

B. H. LATROBE,
Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them, upon application, to any person desirous of perusing the same.
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23d CONGRESS....1st Session.

The following is a list of the acts of public importance passed at this session.

For the relief of John Percival, Master Commandant in the United States Navy.

Making appropriations, in part, for the support of Government for the year 1834.

Making certain allowances, and granting certain arrearsages to the Captains and Subalterns of the U. S. Corps of Marines.

To grant to the State of Ohio certain lands for the support of Schools, in the Connecticut Western Reserve.

For the relief of sundry citizens of the United States who have lost property by the depredations of certain Indian tribes.

Making appropriations for the Indian Department for the year one thousand eight hundred and thirty-four.

Making appropriations for the Naval service, for the year one thousand eight hundred and thirty-four.

Authorizing the Secretary of War to establish a Pension Agency in the town of Decatur, in the State of Alabama, and to provide for paying certain pensions in said town of Decatur.

In reference to pre-emption rights in the South-eastern district of Louisiana.

Making appropriations for Indian Annuities, and other similar objects, for the year 1834.

Making appropriations for the Revolutionary Pensioners of the United States, for the year 1834.

Concerning the gold coins of the United States, and for other purposes.

Making appropriations for the Military Academy of the United States, for the year 1834.

Making appropriations for the support of the army, for the year 1834.

Regulating the value of certain silver coins within the United States.

Making additional appropriations for certain harbors, and removing obstructions in the mouths of certain rivers, for the year 1834.

Making appropriations for the civil and diplomatic expenses of Government, for the year 1834.

To establish an additional land office in Arkansas.

Regulating the value of certain foreign gold coins within the United States.

To extend the time allowed for the discharge of the duties of the commission, for carrying into effect the Convention with France.

To change the boundary between the Southeastern and Western land districts in the Territory of Michigan, and for other purposes.

To revive and amend "An act for the relief of certain insolvent debtors of the United States," passed on the second day of March, eighteen hundred and thirty-one, and an act, in addition thereto, passed on the fourteenth of July, 1832.

Supplementary to the act entitled "An act to carry into effect the Convention between the United States and his Majesty the King of the Two Sicilies, concluded at Naples on the fourteenth day of October, 1832.

To enable the Secretary of State to purchase the papers and books of General Washington.

To authorize the removal of the Custom House from Magnolia to St. Marks in Florida.

To equalize representation in the Territory of Florida, and for other purposes.

For the re-appropriation of an unexpended balance of a former appropriation for the payment of the Georgia Militia Claims, for the year one thousand seven hundred and ninety-two, and one thousand seven hundred and ninety-three, and one thousand seven hundred and ninety-four.

Giving the consent of Congress to an agreement or compact entered into between the State of New York and the State of New Jersey, respecting the territorial limits and jurisdictions of the State.

Making additional appropriations for the Armory at Harper's Ferry, for the year 1834.

To amend an act passed on the twenty-ninth day of May, 1830, entitled "An act for the relief of the owners of sundry vessels sunk for the defence of Baltimore."

Making appropriations to carry into effect certain Indian treaties and for other purposes.

To attach the territory of the United States West of the Mississippi river and North of the State of Missouri, to the Territory of Michigan.

To provide for the organization of the Department of Indian Affairs.

Making appropriations for certain fortifications of the United States for the year 1834.

Making appropriations for the Public Buildings and grounds, and for other purposes.

For the better organization of the United States Marine corps.

To procure a bust in marble, of the late Chief Justice Ellsworth.

For the completion of the road from a point opposite to Memphis, in the State of Tennessee, to Little Rock, in the Territory of Arkansas.

Concerning the duties on lead.

Authorizing the selection of certain Wabash and Erie Canal lands in the State of Ohio.

To establish a port of entry at Natchez, in Mississippi, and creating certain ports of delivery, and for other purposes.

Concerning naval pensions and the navy pension fund.

Authorizing the President of the United States to cause certain roads to be opened in Arkansas.

To suspend the operation of certain provisos of an "act to alter and amend the several acts imposing duties on imports," approved 14th July, 1832.

To aid in the construction of certain roads in the Territory of Michigan.

To enable the President to make an arrangement with the Government of France, in relation to certain French Seamen killed or wounded at Toulon, and their families.

Limiting the time of advertising the sale of the Public Lands.

For the benefit of the City of Washington.

To create two additional Land Districts in the State of Illinois, and two new Land Districts north of said State, in the Territory now attached to Michigan, which lies between Lake Michigan and the Mississippi river.

For the continuation and repair of the Cumberland road.

An act in addition to the "act more effectually to provide for the punishment of certain crimes against the United States and for other purposes:" approved March 3d, 1825.

To amend an act entitled "An act to annex a part of the State of New Jersey to the collection district of New York; to remove the office of collector of Niagara to Lewistown; to make Cape St. Vincent, in the District of Sackett's Harbour, a port of delivery; and out of the Districts of Miami and Mississippi, to make two new Districts, to be called the Districts of Sandusky and Teche, and for other purposes.

Authorizing the Governors of the several States to transmit by mail certain books and documents.

Authorizing a sum of money to be distributed among the officers and crew of the late private armed brig General Armstrong.

Granting a township of land to certain exiled Poles from Poland.

Authorizing the payment of bounty in certain fishing vessels lost at sea.

For the relief of the Roman Catholic church at St. Louis, Missouri.

For the relief of a part of the crew of the brig Sarah George.

To regulate trade and intercourse with the Indian tribes, and to preserve peace on the frontiers.

Making appropriations for building light houses, light boats, beacons, and monuments, for the year 1834.

Making appropriation for the improvement of the navigation of the Hudson river, in the State of New York.

To authorize the Secretary of the Treasury to compromise the claims of the United States against the late firm of Minurn and Champlain and their securities.

For the relief of J. Haggerty & David Austen, of N. York.

For the relief of John Hone & Sons, of New York.

For the relief of the widow and heirs of Felix St. Vrain.

To continue further in force "An act to authorize the extension, construction and use of a lateral branch of the Baltimore and Ohio Rail-road into and within the District of Columbia."

To authorize Gazaway B. Lamar to import an iron steamboat, in detached parts, with the necessary machinery, tools, and working utensils therefor, into the United States, free from duty, and to provide for the remission of the same.

To change the time for commencing the session of the Courts of the United States in the District of Delaware.

To carry into effect the 14th article of the Treaty of the 8th of January, 1821, with the Creek nation of Indians, so far as relates to the claims of the citizens of Georgia against said Indians, prior to 1822.

Repealing certain acts of the Legislative Council of the Territory of Florida.

Authorizing a road to be cut out from the northern boundary of the Territory of Florida, by Marianna, to the town of Apalachicola, within the said Territory.

To mark and open a road from Columbia to Little Rock, in the Territory of Arkansas.

To provide for rebuilding the Frigate Congress.

Authorizing the Secretary of the Navy to make experiments for the safety of the Steam Engine.

To authorize the President of the United States to direct transfers of appropriations in the naval service, under certain circumstances.

Authorizing the purchase of live oak frames for a frigate and sloop of war, and for other purposes.

Authorizing the construction of a Bridge across the Potomac, and repealing all acts already passed in relation thereto.

Increasing the salaries of the Judges of the United States for the Territories of Michigan, Arkansas, and Florida.

To authorize an extra session of the Legislative Council of the Territory of Michigan.

To prohibit the Corporations of Washington, Georgetown and Alexandria, in the District of Columbia, from issuing promissory notes or bills of any denomination less than ten dollars, after the period therein mentioned, and for the gradual withdrawal from circulation of all such notes and bills.

Supplementary to the act to amend the several acts respecting copy-rights.

For establishing the northern boundary line of the country purchased of the Chickasaws by the treaty of 1832.

Making compensation for certain diplomatic services, and for other purposes.

To relinquish the reversionary interest of the United States in a certain Indian reservation lying between the rivers Mississippi and Desmoines.

To provide for the payment of claims for property destroyed by the enemy while in the military service of the United States, during the late war with the Indians on the frontiers of Illinois and Michigan Territory.

To complete the improvements of Pennsylvania Avenue.

Concerning tonnage duty on Spanish vessels.

Resolution directing certain Books to be procured and furnished members of the 23d Congress.

Giving the right of way through the property of the United States at Harper's Ferry, to the Winchester and Potomac Railroad Company.

For distributing the returns of the last Census.

Joint Resolution manifesting the sensibility of the two Houses of Congress and of the Nation, on the occasion of the decease of General Lafayette.

NOTICE TO MANUFACTURERS.

SIMON FAIRMAN, of the village of Lansingburgh, in the county of Rensselaer, and state of New-York, has invented and put in operation a Machine for making Wrought Nail with square points. This machine will make about sixty 6d nails, and about forty 10d nails in a minute, and in the same proportion larger sizes, even to spikes for ships. The nail is hammered and comes from the machine completely heated to redness, that its capacity for being clenched is good and sure. One horse power is sufficient to drive one machine, and may easily be applied where such power for driving machinery is in operation. Said Fairman will make, vend and warrant machines as above, to any persons who may apply for them as soon as they may be made, and on the most reasonable terms. He also desires to sell one half of his patent right for the use of said machines throughout the United States. Any person desiring further information, or to purchase, will please to call at the machine shop of Mr. John Humphrey, in the village of Lansingburgh.—August 15, 1833. A29 if K M & F

PATENT RAILROAD, SHIP AND BOAT SPIKES.

The Troy Iron and Nail Factory keep constantly for sale a very extensive assortment of Wrought Spikes and Nails, from 3 to 16 inches, manufactured by the subscriber's Patent Machinery, which after five years successful operation and now almost universal use in the United States (as well as England, where the subscriber obtained a Patent,) are found superior to any ever offered in market.

Railroad Companies may be supplied with Spikes having countersink heads suitable to the holes in iron rails, to any amount and on short notice. Almost all the Railroads now in progress in the United States are fastened with Spikes made at the above named factory,—for which purpose they are found invaluable, as their adhesion is more than double any common spikes made by the hammer.

All orders directed to the Agent, Troy, N. Y., will be punctually attended to.

HENRY BURDEN, Agent.

Troy, N. Y. July, 1831. Spikes are kept for sale, at factory prices, by L. & J. Townsend, Albany, and the principal Iron Merchants in Albany and Troy: J. I. Brower, 223 Water street, New-York; A. M. Jones, Philadelphia; T. Janviers, Baltimore; Degrad & Smith, Boston.

P. S.—Railroad Companies would do well to forward their orders as early as practical, as the subscriber is desirous of extending the manufacturing so as to keep pace with the daily increasing demand for his Spikes.

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H. BURDEN.



